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ABSTRACT

The Title I provision of the federal Elementary and Secondary Education Act of 1965 provides funds for compensatory services for educationally disadvantaged children. The comparability regulation of the provision requires that a district provide a level of state and local resources to Title I schools comparable to the resource level made available to other schools. Aspects of the regulation discussed in this report include: the calculation of salary compatibility between schools; the problem of analysis when dealing with widely varying school sizes; the reporting of instructional costs other than regular staff salaries; means of strengthening compliance with comparability standards; and discrepancies and deliberate misreporting of data. According to comparability data reported by standards current to this report, there was substantial improvement in compliance with the regulation from 1972 to 1974. Furthermore, average allocation to minority children in Title I schools appears not to discriminate against them. This report asserts, however, that the present methods of data reporting are inadequate. Were reporting methods modified as suggested, more accurate assessment would show compliance with the comparability regulation to be less satisfactory than is now apparent. The report makes recommendations toward improving the effectiveness of the regulation. (Author/GC)

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SELECTED ISSUES IN TITLE I COMPARABILITY

Submitted to

Office of the Assistant Secretary for Planning and Evaluation
U.S. Department of Health, Education, and Welfare

Through

General Research Corporation
McLean, Virginia

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CONTENTS

	Page
I. INTRODUCTION	1
II. STATEMENT OF THE PROBLEM	4
III. ANALYSIS AND RESULTS	8
A. Longevity Pay	8
B. Breakouts of School Size	16
C. Comparability and Needy Student Populations	26
Allocations to Racial and Ethnic Groups	26
Extension of Comparability to All Needy Groups	34
Intradistrict Equalization and Comparability	38
D. The Title I Comparability Reporting Process	43
The Reporting Structure	43
Phasing	46
School District Coverage	48
Steps for Improved Reporting	50
Regulations and Enforcement	53
IV. CONCLUSIONS AND RECOMMENDATIONS	55
Appendixes	
A. Title I Comparability: Trends in Compliance	58
B. Inconsistencies in Reporting Enrollment	68
C. The Comparability Index and Racial-Ethnic Allocations	82

I. INTRODUCTION

When the Congress enacts legislation, its intentions are not automatically executed. There must be a link between the legislation and the world in which change is intended to occur. The Executive constitutes that link and expresses its responsibility through such functions as regulating and enforcing. Developing methods for carrying out these responsibilities is often as difficult as conceiving the original legislation, particularly when the program to be regulated is novel. With the enactment of the Elementary and Secondary Education Act of 1965, the Congress forged new ground in education, particularly in Title I, which provides funds for compensatory services for educationally disadvantaged children. Although the common wisdom says that the Federal bureaucracy is all too eager to regulate, the Title I experience was different: the regulations and accompanying enforcement procedures were, in some instances, developed over a period of time, often in a context of political and educational disagreements between the Congress, the Executive, and public interest groups.

This paper presents a study of the comparability regulation in the Title I program, the requirement that a district must provide a level of State and local resources to its Title I schools that is comparable to the resource level made available to its other schools. How critical this requirement is to the overall success of Title I is little understood. One reason is that Federal attention has often been riveted on attempts to learn whether disadvantaged children are

gaining, losing or keeping up, and the evaluation of the program, as a whole, is most often centered on achievement gains alone. In contrast, the Title I comparability issue is regarded as, at best, a necessary management report and, at worst, an unnecessary burden on school districts and States. This perception fails to recognize the strong connection in the overall program design between achievement evaluations and fiscal evaluations. If the Title I program design required that compensatory education funds actually supplement what is to be made available from State and local sources; and if, in fact, Federal funds are used to supplant State and local sources; and if, in fact, Federal funds are used to supplant State and local funds, a part of the program design has not been implemented. If this is the case, it can hardly be expected that the program would have significant effects in improving achievement.

This study examines selected components of the Title I comparability regulation with the aim of determining directions in which it can be modified in structure or content. The study is guided by two criteria: whenever a Federal regulation places unnecessary or unrealistic requirements, it should be revised accordingly; and when a regulation is apparently not correcting the ill, it should be strengthened. Sometimes both kinds of changes must be considered and the comparability standards seem to be an instance. As it is currently structured, the requirement arose from a perception that supplanting was widespread in the early years of the Title I program. Each year, compliance, as measured by an annual survey, has improved nationally and in most States. The

comparability standard and other mechanisms appear to have brought about substantial increases in the equity with which State and local funds are allocated to students enrolled in Federally-funded compensatory education programs. To the extent to which real progress has been made, there is a particularly strong need to re-examine the appropriateness of the requirement's specifications. On the other hand, moves to make regulation more reasonable should not lead to a weakening of control because a general trend toward improvement may obscure important instances of noncompliance. There is, therefore, a natural and not entirely undesirable conflict between these two criteria.

The next section reviews the comparability regulation briefly and defines the issues addressed in the study. Section III presents the analysis of these problems. The final section presents recommendations.

II. STATEMENT OF THE PROBLEM

The intent of Title I is to target special, compensatory services on educationally disadvantaged children in the nation. To carry out this intent, Federal funds are provided to school districts to supplement, in the schools in which Title I projects are to be operated, the State and local funds used to support the general education program.* The issue that gives rise to the comparability requirement is the possibility that school districts will supplant rather than supplement--that is, transfer State and locally supported services away from schools that are to receive Title I services and then use Federal funds to make up the balance. The effect of such supplanting would be to leave educationally disadvantaged students where they were to begin with, by providing them with a level of services equal to those provided other children, while the intent of the legislation is to provide a higher level of service (and most probably different kinds of services) with the aim of achieving equality of educational opportunity. The term "comparability," therefore, refers to the use of State and local funds, so that Federal funds constitute an augmentation in total services.

Translating this intent into regulation, school districts that receive Title I funds are required to demonstrate that any school in which a project is to be located already receives a level of services from

* For purposes of this regulation, Federal impact aid funds made available through Public Laws 81-815 and 81-874 are considered as State and local funds, on the rationale that these Federal funds are, in effect, funds that would have been available to the district if it had been allowed to tax Federal property.

State and local funds that are "comparable" with the level provided to schools in which Title I projects are not to be operated. This general requirement is, in turn, translated into several specifications.

The services that must be comparable are the ratio of pupils to instructional staff and the ratio of instructional salary costs to pupils. The instructional staff is specified as certified and non-certified instructional staff members who are paid with State and local funds and who are assigned to the school in question; this includes such staff as teachers, principals, librarians, guidance and psychological personnel, and secretaries -- all staff members who render direct and personal services in teaching or in improving the teaching-learning environment. The staff salaries are annual salaries less the amount based on length of service or longevity pay. A third component of the services -- other instructional expenditures -- must be demonstrated to be comparable as well and reported under certain circumstances.

A project school is considered to receive comparable services if (1) its pupil:staff ratio is not more than 105 percent of the average of this ratio in the district's non-project schools, and (2) its salary: pupil ratio is not less than 95 percent of the average in the non-project schools.

Because the resources appropriate for one grade level, say, the elementary grades, may properly differ from those for another level, the regulations permit a school district to submit its comparability data separately for such grade level distinctions as it makes in practice. Thus, a project school serving grades K through 6 is compared with the

group of non-project schools serving the same grades. Because many school districts operate irregular grade-level systems -- some schools serving K to 6, and others serving 1 through 5 -- complicated rules are established to make comparison possible.

Because resources required to operate a small school may properly differ from those for a large school, a district may report these two school groupings separately so that small schools are compared with one another, and large schools with one another. One breakout is permitted -- schools with 100 or fewer students and schools with larger enrollments.

School districts receiving Title I funds must report annually to their State Education Agencies (SEAs) on the comparability of their schools and, if the report indicates a failure to meet the test, must reassign resources (or pupils) and report on its attainment of comparability. In addition, it must collect and report data on other instructional costs and demonstrate that project schools are receiving no less than 95 percent of these resources per pupil in project schools of the same category of grade level and school size.

A number of issues arise for consideration in this study:

- The regulation stipulates that the salaries considered in the calculation of comparability are to be base salaries exclusive of longevity pay. This requirement applies to all school districts receiving Title I funds. In addition, a sample of districts whose reports are submitted by the States to the Office of Education must also submit data on longevity pay to support an analysis of possible modifications to this part of the regulation. That is, therefore, one topic of study in this paper.

- Another part of the regulation calls for separate reporting of small and large schools. This study inquires into how well this stipulation has worked; whether one or more breakouts should be employed; and at what point(s) breakout(s) should occur.

- The Title I comparability regulation is concerned solely with services delivered to educationally disadvantaged children in high-poverty areas. There are other groups in the student body in whom the Federal government has demonstrated an interest and commitment for equality of educational opportunity: children of different racial or ethnic backgrounds, with educational handicaps, and with limited ability in English. This study considers several issues relating to such other groups.

- Finally, the ensemble of questions addressed in the study lead to a number of observations regarding the mechanism by which the Federal government obtains and uses the information required by the comparability provisions of Title I. The study suggests some areas in which improvements appear possible.

III. ANALYSIS AND RESULTS

It is normal practice, in conducting analyses of this kind, to employ the most recent data available. The file for the Fall 1974 survey of Title I comparability was not made available until late in the study period, and a review identified a number of data items that were open to question. The present analysis employs the file for the Fall 1973 survey which included several data validation processes. It is difficult to gauge the effect that the use of more recent data would have on the results presented here.

A. Longevity Pay

Whether or not to include longevity pay in the calculation of comparability constitutes an indirect judgment on what is important in assigning teachers to schools where disadvantaged children are concentrated. Young teachers, whose longevity pay is low, may be thought to be more eager, enthusiastic, and energetic in meeting the special needs of these students. But it can also be argued that such teachers do not have sufficient experience or maturity to deal with the special behavior or learning problems that sometimes arise in Title I schools. Complementary arguments can also be put forth regarding teachers with higher longevity pay. Either they can be said to have the seasoning, experience, and educational insight required to deal effectively with the problems of compensatory education, or they can be characterized as inflexible and insufficiently energetic to work effectively with children who need, most of all, innovative approaches in education.

Neither theory nor empirical study has done much to improve our understanding of the teacher characteristics that seem to contribute most to compensatory education. And it is reasonable to assume that, if sound empirical studies were available, they would reflect what to many would be construed as a muddle: some relatively young teachers have not only energy but also insight, while other young teachers may even lack the energy that is generally thought to characterize youth; and on the other hand, some experienced teachers would be seen to have not only seasoning and control of the classroom, but also the interest and enthusiasm generally thought to be the province of the younger teacher.

In the absence of foundational work on the relative importance of experience, it is therefore not known whether longevity pay should be considered in calculating comparability. But some definition of instructional salary must be stipulated in the regulation, and the present requirement restricts the calculation to base salary. The regulation recognized that the matter remained open to further examination, by requiring school districts to report longevity pay data so that the Office of Education could determine whether or not the requirement should be expanded to include longevity pay as well as base pay. This task is aimed at assisting in that determination.

For districts for which longevity pay is known, the comparability status has been recalculated on the basis of the sum of base salary and longevity pay, and the results are observed in terms of the number of schools and districts that change status. Changes of status are also related to factors such as school size, grade level, and region.

If longevity pay were included, almost half of the districts in the sample (413) that were in compliance in 1973 would change status. Approximately 14 percent of the sample's 5972 comparable schools change status. The much higher rate of status change for districts is accounted for by the fact that a district is out of compliance if a single school is out of compliance. Only 35 schools would change from noncompliance to compliance if longevity pay were included; this could be expected because fewer schools (294) were not comparable to begin with.

As an alternative to either including or excluding longevity pay entirely, calculations were made of the number of schools and districts changing status when varying proportions of such pay is included. The results are shown in Table I. The trends shown in the table with varying proportions of longevity pay are consistent for other analyses; for simplicity, only 100 percent inclusion is presented in discussing other results.

Table I. Number of Schools and Districts Changing From Comparable to Not Comparable When Varying Proportions of Longevity Pay are Included.

	Sample Size	Proportion of Longevity Pay Included 40%	60%	80%	100%
Districts	413	143	166	182	200
Schools	5972	470	627	739	862

Table II examines regional differences in status change of districts when longevity pay is included. Districts in the South and in the Plains states would be most affected by inclusion of longevity pay, and districts in the West and the Mid-Atlantic region less affected.

Table II. Districts Changing From Comparable to Not Comparable, By Region

	Sample Size	Number Changing	Percent Changing
New England	42	21	50
Mid-Atlantic	46	19	41
South Atlantic	58	36	62
E. South Central	22	12	55
W. South Central	49	32	65
E. North Central	47	22	47
W. North Central	22	14	64
Mountain	48	17	35
Pacific	79	27	34

Table III shows the effects of inclusion of longevity pay by districts according to degree of urbanization. Large urban districts would be most affected; small-town districts (urban non-Metropolitan) would be least affected, but even here more than one third of such districts would change from comparable to not comparable.

Table III. Districts Changing From Comparable to Not Comparable, by Degree of Urbanization

	Sample Size [2]	Number Changing	Percent Changing
Metropolitan	127	77	61
Suburban [1]	130	55	42
Urban Non-Metropolitan	85	32	38
Rural	52	25	48

1/ Suburban districts are those in an SMSA, the majority of whose population resides in urbanized areas but not in the central city of the SMSA.

2/ The sample is smaller than in preceding tables due to a lack of urbanization data for 19 districts.

As one might expect, change in comparability status by including longevity pay does not fall equally on schools of varying size. By far, the greatest effect is seen in very small and large schools. Table IV shows that almost one fourth of schools with less than 100 pupils would change from comparable to not comparable, and almost one fourth of schools with enrollments of more than 1000 would similarly change, whereas only 13 percent of schools in the intermediate ranges would fail the comparability test.

Table IV. Schools Changing From Comparable To Not Comparable, By Enrollment

School Size	Sample Size	Numbers Changing	Percent Changing
1 - 100	62	15	24
101 - 200	396	29	7
201 - 300	737	57	8
301 - 500	1911	216	11
501 - 700	1374	218	16
701 - 1000	1029	194	19
1001 - 1300	390	86	22
1301 - 1600	170	36	21
Over 1600	205	54	26

The effects of longevity pay inclusion would depend only slightly on the grade span of a school. Of elementary schools comparable in 1973, 14 percent would change status. The corresponding figures for junior high and high schools are 17 percent and 12 percent, respectively.

In reflecting on these results, it can be seen that inclusion of longevity pay in the comparability calculation would have different impacts on districts by region and degree of urbanization and on schools of different enrollment sizes. But these differences are insignificant in relation to the basic phenomenon: the status of comparability would be drastically altered by inclusion of longevity pay. We are thus back to the starting point --

attempting to assess the importance of experience in the delivery of effective compensatory services to educationally disadvantaged children.

It is helpful to note the treatment given in Keyes to a problem that, while arising in a desegregation case, involves similar issues. The basic presumption of the plaintiffs, agreed to by the court, not questioned by the School Board, and eventually accounted for in the remedy, is that "faculty experience is an important factor in determining the educational opportunity offered at a particular school..."* The remedy in Denver included setting incentives to retain skilled and experienced teachers and administrators in the minority schools, for otherwise such teachers were given preference in the consideration of transfer requests, which resulted in frequent transfers from minority to Anglo schools.

The Denver experience cannot be represented as a national phenomenon, and the assumption of a positive relationship between teacher experience and educational opportunity is open to question. These comments do not, however, support the exclusion of longevity pay from the comparability test. All other things being equal -- that is, in the absence of information on the educational effects of experience -- an unbiased or neutral school policy would result in distributing approximately the same amount of teacher experience in all the schools of a district. Neutrality in this regard implies that the comparability calculation should be based on

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* Keyes vs. School District Number One, Denver, Colorado, 313 F. Supp.61 (1970)

total salary, base plus longevity.*

If the figures in Table I could be extrapolated, possibly half of the nation's Title I districts would have to make reassignments. Objections could be lodged against inclusion of longevity pay on the basis of the upheaval in the nation's school systems that this change would bring about, and on the basis of the difficulty of effecting transfers because of teacher preferences. In response, it could be maintained that the extent of upheaval is a rough indicator of how far we have to go in achieving comparability in a meaningful way, and that the preference of experienced teachers for non-project schools (if there is such a preference) only makes the disparity in equality more evident. Nonetheless, the need to change the regulations must be balanced against this burden. Except in districts in which turnover is high, or in which teachers are not reluctant to serve in Title I schools, effecting compliance with revised regulations could be quite difficult. A possible resolution is to count less than all of longevity pay in the comparability calculation. There are several difficulties with such a resolution. First, it is a much more complex process for the staff responsible for filing the reports. Second, it would still require reassignments in approximately one third of the districts (again, assuming that the sample

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* It should be noted that the preceding argument can be supported without specific reference to the tabulations presented earlier. There is no evidence that experienced teachers are counter-productive in providing services to educationally disadvantaged students. Since there is not, there is no reason for any substantial variation in the distribution of experience throughout a school system compensatory schools as distinguished from others. Therefore, the entirety of the salary paid to teachers (or all instructional staff) should be counted in the comparability test.

on which these figures are based can be relied on for these rough approximations). In view of these difficulties and the fact that they are compromises with what appears as equity, it may be that there is no way to avoid the upheaval that might result from implementing this recommendation.

B. Breakouts of School Size

The comparability regulations recognized early that it would be difficult for some school systems to apply the same standard to both small and large schools. The problem arises in some systems that encompass areas of quite different concentrations of residents, so that its suburban areas could support schools with many students, but its more rural areas would support smaller schools in order to minimize long-distance busing. That this is a real problem can be seen from the situation of the Miller School District in South Dakota. In its report for the Spring 1973 comparability survey, the district shows three non-project schools in the low-enrollment group averaging less than 9:1 in pupils per teacher. In the seven Title I schools in the district, the pupil:teacher ratios range from 12:1 to 17:1. Compared with national ratios, the Title I schools were receiving services that are more than acceptable, but compared with the district's own non-project schools, the Title I schools would require an additional 13 teachers to achieve comparability. One problem is that in rural areas it is often not practical to have a teacher serve more than one school because of the difficulty of traveling from one school to another during the school day, and accordingly, teachers must be added in increments

of one, more often than is necessary in a city school. By the Fall 1973 survey, every one of South Dakota's districts in the national sample either provided Title I services to all schools, or provided no Title I services at all. As the regulations read, no report on comparability is required.

One can only conjecture on the events that led to this change in one State's Title I project assignment procedures, and on the possibility that similar changes are occurring in other States. If districts have changed their procedures in selecting areas for Title I projects because it is impossible to meet comparability reporting requirements, the effects are undesirable: either some areas that are needy are not being served at all, or compensatory education funds are being spread too thinly to have the desired effect. From this perspective, it is worth examining the possibility that the Federal government has laid down rules that create an apparent need to circumvent them.

The Title I comparability regulations recognize the problems associated with comparing small schools with large ones by allowing a district to sort its schools into two groups by enrollment size, with a breakpoint at 100. The present study investigated the appropriateness of this breakpoint, as well as the possibility of moving the breakpoint or of adding additional breakpoints. Elementary, junior high, and high schools are treated separately.

The analysis is based only on pupil:staff ratios as a function of school size and did not consider the effect of school size on per-pupil salary expenditure due to the lack of a sufficiently large data

base with school-by-school expenditure data. The Fall 1973 Title I survey data base covers only 24 districts that reported expenditure data for both project and non-project schools. All other reporting districts submitted only the data actually required by regulation; namely, data on each Title I school individually, and on non-project schools by the average for all such schools. The pattern of pupil:staff ratios is studied here using the national sample of school districts in the ELSEGIS School Universe data base. Schools with programs for the handicapped were excluded because of the very low pupil:staff ratios that can be expected in such schools. Figure 1 shows the trends for each grade level in pupil:staff ratios as school size varies up to 700. The curves are obtained by plotting the average pupil:staff ratios for all schools in a size interval length of 10, 20, or 50 students, the length being less for intervals in which change is more rapid.

In the elementary schools there is a sharp rise in the curve up to a school size of about 50. The curve then begins to level off quickly. On the assumption that the marked decrease in pupils-per-staff-member in small schools is due to forces beyond the control of school administrators and not to any bias in favor of small schools, it appears that a cutoff point of about 50 may be more appropriate than the present breakpoint of 100 students. Schools in the size range from about 50 to 100 appear to benefit from some economy of scale and, in fact, distribute staff among pupils at about the same rate as much larger schools. Hence, it seems inappropriate to require schools with enrollments less than 50 students -- schools that experience diseconomies of scale -- to be compared with schools in the 50 to 100 enrollment range.

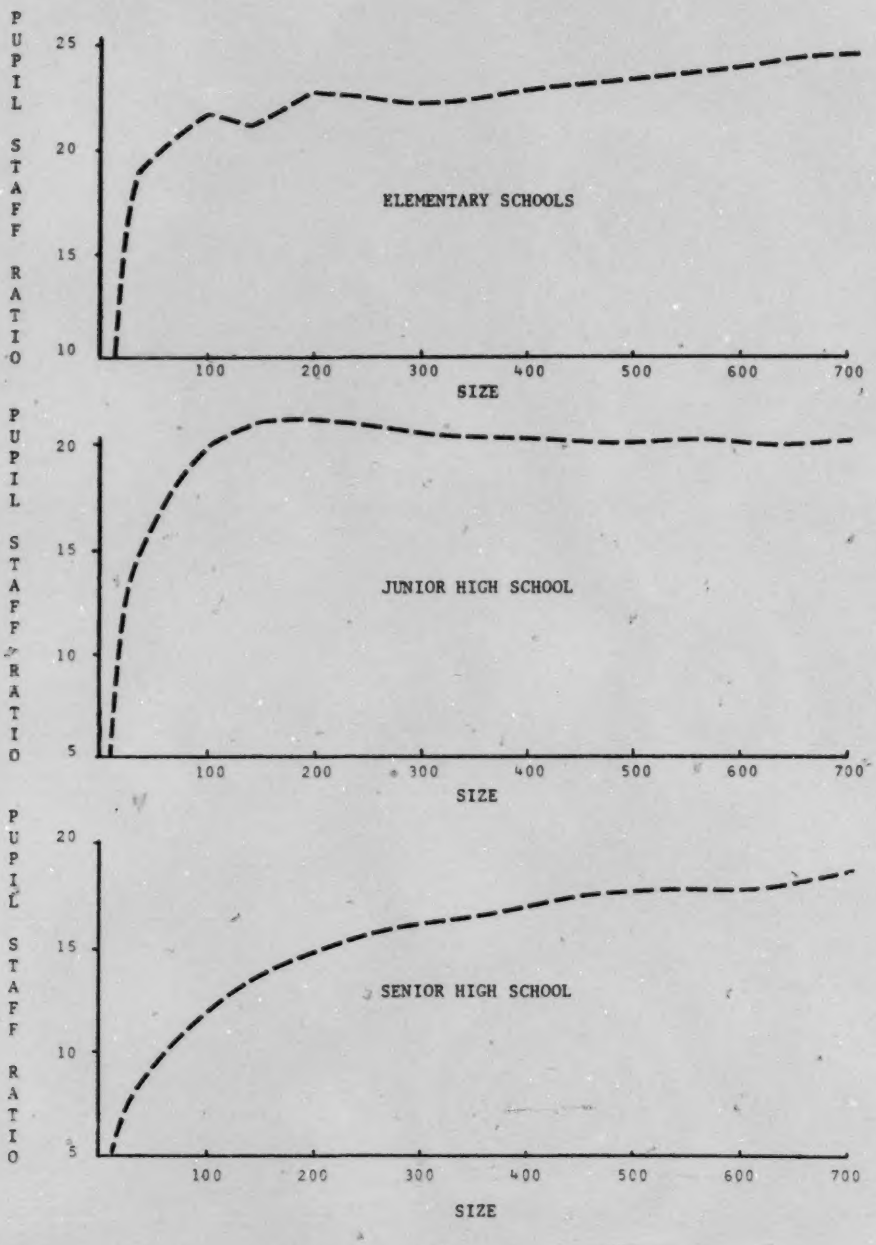

Figure 1. Pupil:Staff Ratios as a Function of School Enrollment

Although, as was pointed out above, the rate of increase of the pupil:staff ratio is much less above a size of 50, there is nevertheless still some increase as enrollment increases. From a school size of 50 to one of 200, the curve increases by about 11 percent -- almost twice the tolerance permitted by the comparability regulation. From size 200 to 350, the ratio fluctuates and thereafter increases slowly. These facts suggest that a second breakpoint be considered at about 170. The variation between size 50 and 170 is about 7 percent, and the variation above size 170 does not exceed 5 percent until school size increases beyond 450.

Even if two breakpoints -- 50 and 170 -- were adopted, some districts could still experience some difficulty in meeting the comparability requirement. For example, a district might have schools at both ends of the 25- to 50-pupil interval. Assume that the latter were a project school; if the trends presented in Figure 1 for the national sample applied here, the school with 50 pupils should have about three teachers, or one for each 16.7 pupils, whereas the 25-student school would be expected to have two teachers, or one for each 12.5 pupils. (Actually, the curve suggests 1.6 teachers for the 25-pupil school, a quantity of resources that is difficult to provide in many areas, as we have noted. This makes even more difficult a fair comparison between the 25- and 50-pupil schools). The 50-pupil school would be judged not comparable even though it was providing adequate services according to the national sample of schools of its size. It is doubtful that most districts would be able to manage so that their schools in the less-than-50-students range would be of about the same size.

In junior high schools there is quite a marked drop in pupil:staff ratio below a size of 100, and very little variation in schools above that breakpoint. (That is, there is little variation in the mean ratio as a function of size. There is, of course, substantial variation from school-to-school; the standard deviation of the ratio is 5.5 pupils per staff member.) Thus, the breakpoint at 100 is appropriate.

The very large increase in expected pupil:staff ratio as junior high schools increase in size to 100 suggests that a second breakpoint be considered at, say, 50. The exact choice of a second breakpoint is rather arbitrary since there is no great difference in the shape of the curve below size 100 -- it is very steep everywhere in that region. The figure of 50 is suggested simply because it is near the middle of the interval and is the point suggested for the elementary schools. The purpose of this second breakpoint is to reduce the variation within any interval of comparison.

The curve for high schools is less easily interpreted than for the other two grade levels. No obvious breakpoint can be seen; rather, the curve levels off very gradually. We can note that the increase in the ratio as school size increases above 350 is not very great, amounting to about 12 percent before the curve levels off. Although 12 percent is large compared with the 5 percent variation allowed by Title I comparability regulation, the amount of variation to be expected in the ratio can be halved if it is assumed that it is within the power of a district to keep its high schools from varying in size by more than about 300 pupils. Hence, a breakpoint at 350 might seem reasonable.

To account for variations in pupil:staff ratio in the smaller schools, additional breakpoints might be adopted at, say, 50 and 150 pupils. There is a 16 percent increase in pupil:staff ratio as size increases from 150 to 350, and a 47 percent increase from 50 to 150. Although these variations are quite large, they are certainly an improvement over the present system of a single breakpoint at 100. The variation in the ratio for high schools above 100 enrollment is about 60 percent; for schools below 100, it is more than 100 percent.

The review of all three grade groupings suggests, first, that the current regulation stipulates a school size breakpoint that is not in accord with the realities of national practice, and second, that there is no simple resolution to the difficulty. A compromise resolution might be sought in one of several directions.

One approach is to limit the number of breakpoints in any grade grouping to one, but to modify the levels. The choices would then be: for elementary schools, 50; for junior high schools, 100; for senior high schools there is no good choice and either 100 or 150 could be employed. This approach does little to solve the problem.

Another approach is to increase the number of breakpoints moderately. The selections would then be: for elementary schools, 50 and 170; for junior high schools, 100; for high schools, 50, 150, and 350. Such an option would be a significant improvement over the current regulation in accounting for variations in pupil:teacher ratios for different school sizes, but the remaining variations are still quite large. Moreover, for elementary and senior high schools, it would increase the number of

schools that would escape the comparability requirement because there would be no other schools in the same size interval to serve as a comparison base. As breakpoints are added beyond those listed, the variation is reduced accordingly, but the complexity of the reporting process increases as well.

Still another approach is to select the best possible set of breakpoints but to permit districts some leeway in implementing the requirement. The leeway could take the form of allowing a district to use a set of breakpoints of its own choice, based on its special staffing and school size characteristics. Resolutions such as these have the greatest potential for conforming with actual school district practice, but also the greatest potential for misapplication, since it would be virtually impossible to set standards that were, at the same time, sufficiently flexible and sufficiently rigorous to support evaluation of the district's selection. If there were no way to evaluate the choice, there would be no constraint on the district to avoid simply selecting the cutoff(s) that would let him pass the comparability test.

Perhaps the most significant outcome of this analysis is not an improved selection of breakpoints, but rather a demonstration of the inadequacy of using breakpoints alone to address the problem of developing an equitable method for comparing schools of different sizes. An alternative approach is to use the national trends depicted in Figure 1 (or trends in the State or region in which a district is located) as a reference point. One might suggest, for instance, that the application of revenues to a project school could be judged acceptable if it was

generally in line with trends for schools of the same size. But this would evade the intent of the comparability requirement that school allocations must be internally consistent within a school district. The national trends can be used, however, in the following way:

Assume that a district has only two elementary schools: non-project school A with 45 students and 3 staff members; and project school B with 306 students and 17 staff members. The ratios are 15:1 and 18:1, respectively. School B, a Title I school, would not be comparable since its ratio is much higher than 105 percent of school A's ratio. If we inspect Figure 1 for schools of these two sizes, we can see that a large discrepancy is to be expected, 19:1 and 22:1 for schools of 50 and 300, respectively (this is exactly the kind of expected discrepancy that led to the size breakdown in the current regulation). An adjustment factor of 1.16 is obtained by dividing 22 by 19. When school A's actual ratio is multiplied by 1.16, we obtain an effective ratio for this non-project school of 17.4. The actual ratio for school B of 18:1 is well within the five percent comparability limitation.*

Several comments are in order regarding this method. It assumes that the national trends are not the result of a nationwide bias in favor of small schools, a matter that should be subjected to analysis in any event. It would, if employed in the comparability test, have to incorporate staff salaries, as well as staff numbers, which would entail a price adjustment, which in turn, suggests that the district's state

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* In practice, of course, there would be several project schools and several non-project schools, and the application of this method would require adjustments for each.

trends be used as a reference base. It appears to complicate the reporting process, although, in fact, the size adjustment factors could be precalculated by the Office of Education and printed on the reporting forms so that school districts would be required to go through only one new step. Finally, if the approach were to be implemented, it would have to be subjected to more thorough analysis of school size and pupil:staff trends than have been carried out in this study.*

Whatever approach is adopted to resolve this problem, it appears reasonable to incorporate a procedure by which a district would be allowed to justify deviations on the basis of its special circumstances. Such an appeal-with-justification procedure could be coupled with any of the approaches discussed earlier, and indeed if the current breakdown were to be retained, an appeal procedure should definitely be incorporated. Such a provision could be criticized for the administrative workload it would add to all levels of the education establishment, for the lack of systematic character, and for its apparent invitation to evade the intent of the comparability regulation. But, in light of the actual (and presumably justified) differences that we have noted in allocations to schools of different size, it appears that some such method will be required if the comparability requirement is to be brought into accord with reality.

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* The analysis should include a review of school-size adjustments made by states in their school financing. A number of states adjust for small schools, and two use a cutoff of 100.

C. Comparability and Needy Student Populations

Title I comparability regulations are aimed at assuring that State and local funds are distributed equitably between Title I schools and other schools in a district. In terms of the populations of interest, the only distinction is between children attending project schools and those attending non-project schools. There are several other perspectives from which the Federal government may wish to view intradistrict equity.

Allocations to Racial and Ethnic Groups

It is clearly of interest at the Federal level to assess the equity of allocation of State and local funds to racial and ethnic minorities. Unlike the preceding analyses, the purpose of such an assessment would not be to consider changes in comparability requirements but rather to consider whether other action may be required to ensure that population groups of high national priority will receive "comparable" services. The concern is thus more related to civil rights monitoring than to Title I.

A number of comparisons could be considered: between students of one minority in a district and all other students in the district; between all minority students in a district and all other students in the district; and between groups of students in Title I schools. Data limitations presently make it difficult to analyze allocations other than between groups of students in Title I schools, for only the Title I comparability reports contain resource data at a level of detail needed to support a comparison. Even with this data base, school-by-school data are available principally for Title I schools (a few districts submit detailed data on

non-project schools at their own election). To identify racial or ethnic characteristics of students in Title I schools, it is necessary to employ racial data from the (formerly annual) survey of the Office of Civil Rights.

Unfortunately, the files from the OCR survey and the Title I comparability survey for the Fall of 1973 exhibit a number of striking inconsistencies (and the OCR file for 1974 is not available at the time of this report). In many cases, the enrollment figures for the two files differ by significant amounts. In New York City, for example, in one fourth of the Title I schools the enrollment lists in the Title I survey differs by more than 10 percent from the enrollment listed in the OCR survey. Considering that both surveys were reported as of the same date, these discrepancies are remarkable.* They can be explained only in small part by understandable variations in methods of reporting special education students in the two surveys. Appendix A describes an attempt to reconcile the discrepancies. An ad hoc and arbitrary judgment was made to employ the Title I enrollment figures as the "true" figures, and to employ the OCR figures only to calculate the percentage of minority students in each school. Moreover, some districts that appear in one data base do not

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* The inconsistencies are not random. Districts tend to report fewer students in Title I schools in the Title I survey than in the OCR survey. This tendency may be related to the resulting increase in the resources that appear to be provided per pupil in Title I schools, thus making it easier to achieve compliance with comparability requirements. This discrepancy problem has been discussed by other researchers. The Lawyers' Committee for Civil Rights Under Law, in an in-depth review of New York City's Title I and OCR reports for 1972-73, found that a special weighting method was used to report the number of students attending each high school. Application of the method had the effect of decreasing apparent per-pupil resources in non-project schools and increasing apparent per-pupil resources in Title I schools.

appear in the other so that the sample available for the analysis is smaller than the Title I comparability data base. The sample contains data for 349 districts in 43 States, or about 35 percent of the districts in the Title I national sample. Approximately two million Title I children are covered in the analysis, about 37 percent of the total number of Title I children in the nation. The sample employed in this analysis is, therefore, large enough to be useful, although it is not systematic and cannot be regarded as truly representative.

For this analysis we wish to determine the average per-pupil resources for majority and minority pupils. If a district has two elementary schools operating Title I projects, school A being predominantly majority, and school B being predominantly minority, a comparison of the average per-pupil resources in the two schools provides a general idea of possible disparities. The Comparability Index, described in detail in Appendix C, is designed to calculate disparities much more precisely. The form of the calculation can be clarified by a simplified example.

School	Total Students	Total Salaries	Percent Minority	"Minority Salaries"	"Majority Salaries"
A	1000	$500,000	60%	$300,000	$200,000
B	800	$460,000	25%	$115,000	$345,000

We can now calculate the average resources for majority and minority students. There are 1000 majority students (40 percent of 1000, and 75 percent of 800) who receive a service level of $545,000, for an average of $545. There are 800 minority students receiving $415,000

in allocated salaries, for an average of $519. These two figures can be compared either with each other or with the non-project average. Assume that the non-project average of per-pupil salaries is $539. Then majority students in Title I schools receive 1.01 times the average of non-project students, and minority students in Title I schools receive only 0.96 of the non-project average. (The Title I data file does not contain data on individual non-project schools, and it is therefore not possible to relate minority allocations in non-project schools to, say, majority allocations in Title I schools.)

Perhaps surprisingly, the results indicate that minority students in Title I schools are receiving services from State and local funding that are comparable with those received by majority students in the same schools.

Of the 43 States covered in the analysis, only 10 evidenced disparity levels greater than 5 percent between the two student groups. Disparities for these States are shown in Table V, where a positive value indicates a disparity in favor of minority students. Of these ten, the disparity favored minority students in 7 cases. The three favoring majority students were the District of Columbia, Missouri, and Kansas. The greatest disparity is in Missouri, which shows an allocation of funds favoring the majority by 13 percent. It is interesting to note that, except for the District of Columbia, States in the East and Southeast have kept their allocations relatively equalized among majority and minority students in Title I schools.

Table V. State Disparities Between Majority and Minority Resources in Title I Schools

Iowa	+ 11% (favoring minority)
Nebraska	+ 10
California	+ 9
Minnesota	+ 8
Ohio	+ 7
Arkansas	+ 5
Oregon	+ 5
33 States	Disparities less than 5%
Louisiana	- 5
District of Columbia	- 7
Missouri	- 13

Results at the State level must be interpreted with caution, since district coverage within a State can be far from representative. For instance, Missouri is represented by only two districts. St. Louis is one of these; it has 20 times as many minority children as majority children in Title I schools, and shows a 16 percent resource disparity in favor of the majority. Indeed, all three States in which there are disparities favoring majority children also have significantly more minority children participating in Title I programs than majority participants. This is the situation in the District of Columbia, for which the file contains only 167 majority children in Title I schools. The majority children tend to be from high-income families and attend smaller schools that are predominantly majority.

Table VI shows majority-minority disparities for selected large-city school districts, based on 1973 data. Again, there is no evidence of a widespread trend of discrimination in the provision of services to minority students in Title I schools relative to their schoolmates. Most of the cities in the table have positive deviations, which means that they are spending more on minority students in Title I schools than on majority students in Title I schools. Six cities have negative deviations, all in the mid-West or the South, but only in the District of Columbia, Indianapolis, and St. Louis are the disparities significant.

Table VI. Large-City Disparities Between Title I Majority and Minority Students

	Percent Minority	Disparity
Birmingham, Alabama	70%	- 1%
Los Angeles, California	94	+ 6
Fresno Unified, California	77	+ 11
San Diego, California	76	+ 10
San Francisco, California	73	+ 2
Denver, Colorado	75	+ 10
Bridgeport, Connecticut	88	+ 4
District of Columbia	99	- 7
Dade County, Florida	79	+ 3
Chicago, Illinois	99	0
Indianapolis, Indiana	65	- 6
Baltimore, Maryland	84	+ 9
Boston, Massachusetts	73	+ 6
St. Louis, Missouri	94	- 16
New York, N.Y.	87	+ 1
Columbua, Ohio	51	+ 9
Philadelphia, Pennsylvania	84	+ 2
Memphis, Tennessee	87	- 3
Dallas, Texas	95	- 2
Houston, Texas	93	+ 2

Eight of the districts listed in Table VI have two minority groups of substantial size. For these, a separate analysis was conducted to determine the relative resources applied in Title I schools to students in the two minorities. The disparities are not great enough to be considered significant.

Table VII. Large-City Disparities Between Title I Students of Different Minorities

	Black	Spanish	Oriental
Los Angeles, California	+ 5%	+ 6%	
San Diego, California	+ 9	+ 11	
San Francisco, California	+ 1	+ 4	+ 1
Denver, Colorado	+ 1	+ 1	
Dade County, Florida	+ 3	+ 4	
Boston, Massachusetts	+ 7	+ 3	
New York, N.Y.	+ 1	+ 2	
Houston, Texas	+ 1	+ 5	

In examining large-city districts, we are dealing not only with large populations but also with districts in which the minority represents a numerical majority. It is also of interest to examine how minority Title I students fare in districts in which the minority is in the minority, since it might be thought that in such areas the lack of political power might create a shortfall for minority students. Table VIII shows the average resources for minority students in Title I schools for district deciles by percentage minority, where the average is weighted by minority Title I enrollment. The table indicates that districts with lower percentages of minority do tend to allocate less

to their minority Title I students than do districts with higher percentages; but even so, the resources are higher than those allocated to non-project schools.

Table VIII. Average Minority Title I Resources in Districts of Varying Minority Proportions

Percentage Minority in District	Resources Relative to Non-Project Students
0 - 10%	+ 5%
10 - 20	+ 5
20 - 30	+ 7
30 - 40	+ 9
40 - 50	+ 8
50 - 60	+ 13
60 - 70	+ 7
70 - 80	+ 10
80 - 90	+ 11
90 - 100	+ 12

Extension of Comparability to All Needy Groups

A quite different issue arises as a result of recent proposals to consolidate a number of Federal education programs, including Title I, education for the handicapped, and programs for those with limited English-speaking ability (LESAs). The question is whether or not it is feasible to establish a comparability provision similar to Title I but expanded to include all the needy groups.

These groups have several features in common. All three have historically been underallocated funds through the mechanism of local and State control. All three need not only a level of services that is comparable to that provided other students, but also a different mix of services. For each of the three, the Federal government has taken the lead in identifying needs and establishing major programs of assistance. For all three there is an understandable concern, based on Title I history, that localities and States may tend to use Federal funds to supplant State and local funds, thus foiling the intent of Federal action. Given the nation's commitment to these groups, it is doubtful that the Congress and the Executive would permit such shortfalls to occur without action, and the action would probably take the form of a kind of comparability-of-services program similar to that now employed in the Title I program. If that is the case, the issue is not whether additional regulations will be developed and applied, but whether such regulations as will be developed can be combined into a single reporting and enforcement scheme.

The three groups in question must be dealt with separately for purposes of analysis of this question. The educationally disadvantaged children will be identifiable by a school location (even if, as has been suggested, the definition of disadvantage is modified to stress low achievement rather than low income). The LESA students may be more concentrated in some schools than another, but presumably it is desired to provide appropriate services wherever they attend. The handicapped student categories present a greater problem than either the educationally disadvantaged or the LESAs because some will be able to fit into the mainstream in a regular classroom while others will be in special education classes (or buildings). Setting aside for the moment the children who are in special education classes for the handicapped or the severely learning disabled, it appears that the following rationale could be employed to develop a comparability standard for all others.

There is an apparent difficulty in establishing such a standard because some schools would be designated as Title I project schools, whereas such a convenient designation does not apply for the LESAs or the mainstreamed handicapped. The key to unraveling this difficulty is the Comparability Index, which can be applied to any set or subset of the student population as long as data are available on the schools attended and on the resources made available in those schools. Thus, it is not necessary to identify, in analogy to the Title I situation, a "handicapped" school or a "LESA" school; rather, what is needed is the knowledge of the number of children with limited English-speaking ability and the number of

educationally handicapped children in each school.* Given this information, it is then possible to estimate, using the Comparability Index, the resources available to any of these groups relative to the resources made available to all others.

The information requirements to support this kind of comparability reporting are by no means trivial, since they entail obtaining school-by-school data that are currently collected only sporadically and unevenly. Even so, the information gap is not likely to continue to be accepted by either the Congress or the Federal bureaucracy, given the increasing commitment of funds that will be going to local school districts on behalf of these groups. Some of this information is already being collected, but in ways that may not be satisfactory for reporting purposes. For instance, it is obviously important to know how many children actually require bilingual instruction, not merely how many have Spanish-origin surnames. If it is worthwhile for simplification of administration (at State and local levels, as well as the Federal level) to consolidate the programs themselves, it is obviously also worthwhile to combine the reporting procedures.

Several objections can be raised to combining these groups into a single education program, or to combine their reporting into a single procedure. It can be argued that members of each of the student groups

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* This does not imply that the designation of some schools as serving educationally disadvantaged would be dropped. Presumably, it would be desirable to retain the targeting of disadvantage as it is currently operated, but educationally handicapped and LESA services could be provided in whatever schools they were needed.

require quite different kinds of services, and that a single reporting scheme would imply that they should all receive the same kind of basic program. That is, of course, a misinterpretation of the proposal. All that is required is that, for an educationally handicapped child who is deemed to require 1.5 times the resources provided to the average child, the 1.0 portion in fact be in place, so that the .5 of handicapped funds represents a true augmentation.

For children in special classes for the handicapped or for the severely learning disabled, it would be necessary to establish separate interpretations of comparability. Because State funds presently constitute the major source of support for handicapped programs, it is reasonable to require, as a condition for receiving Federal funds, that any district with special education programs be provided per-pupil levels of State support that are comparable with the Statewide average for such programs. The States would, therefore, be responsible not only for receiving and reviewing local reports (as in the current Title I comparability reporting procedure), but also for generating a coordinated report exhibiting State and local funds separately.

If such programs were to be consolidated, and if it were desired to establish a comparability reporting scheme for the consolidated program, it would almost certainly be desirable also to establish an integrated reporting system dealing with all funds involved -- both the State and local funds that are to be considered under comparability, and the special education funds that would be provided by the States and the Federal government. The reasons can be made clear by reference to

services for the handicapped. If the Federal government is to match State funds for serving these children, the funding sources must be identified separately even though they are all serving the same children. It must be shown that handicapped children are receiving a level of resources that is at least equal to the sum of two components: (1) an amount comparable to the State and local funds provided to students in general; and (2) a proportionate amount of the State special funds and Federal funds targeted for the handicapped. Thus, the integrated reporting system should establish "comparability" with respect to the application of general State and local funds and responsible stewardship in the application of the funds from State and Federal sources.

Intradistrict Equalization and Comparability

A third issue in intradistrict equity arise in the wake of court decisions, most notably Hobson v. Hansen in the District of Columbia, which establish requirements that a school system equalize resources among all its schools. The question arises whether the two kinds of equalization requirements are necessarily in conflict or can be met simultaneously. Of course, in the trivial sense, there is no basic conflict as long as neither requirement is itself a source of inequality. But, in fact, conflicts do arise from the differences in the specifications of the two requirements. For presentation purposes, the analysis considers only the Hobson requirement. Since conflicts between the Title I and Hobson requirements have been exhaustively covered by Joan Boratz,* the present treatment is brief.

The major difference in the two requirements are as follows:

Definition of Staff. Title I comparability required reporting on all instructional staff, which includes not only classroom teachers but also such other staff as guidance counselors, aides, librarians, principals, and secretarial and clerical staff. The Hobson ruling restricts the staff to classroom teachers and special-subject teachers (art, music, etc.).

Funds. The funds to be included in the Title I comparability calculations are all non-Federal funds, except that Federal Impact Aid are also to be included. In the case of the District of Columbia, this equates with the combination of the Congressional appropriation and Impact Aid. Under Hobson v. Hansen, Impact Aid is considered as Federal funding, is excluded from equalization and is to be reported separately.

Compliance Criteria. Under Title I, project schools must have a per-pupil salary expenditure of no less than 95 percent of the mean of non-project schools and a pupil:teacher ratio of no more than 105 percent of the mean of non-project schools, and failing either of those criteria must, in addition to correcting the inequity, submit a

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* See J. Baratz, "A Quest for Educational Opportunity in a Major School District: The Case of Washington, D.C.," 1975. The author presents a detailed history of the Hobson decision leading to the implementation of intradistrict equalization in the district of Columbia in 1973, comparing schools which were low-spending or high-spending prior to the equalization order. The high spending schools had primarily high-income children; the low-spending schools had primarily low-income children. An in-depth analysis in 1974 determined that school spending disparities still existed which tended to favor high-income children. Resource disparities were also found between these same schools (i.e., those reported in the Title I comparability reports for 1974) tending to favor the high-income children.

report demonstrating that its per-pupil expenditures for instructional materials in project schools is no less than 95 percent of the mean for non-project schools. Under Hobson, all schools must be within five percent of the mean. Under Title I, each project school is thus measured against the mean of non-project schools. Under Hobson, each school is measured against the mean of all schools (including itself).

Salary. Under Title I, longevity pay is to be excluded from the calculations; under Hobson, it is included.

Other Considerations. The Title I comparability regulations take explicit account of possible economies of scale by permitting separate reporting of small (100 or less) and large schools; under Hobson, deviations in resource allocation can be justified if economies of scale are proven. Title I comparability makes no allowance for extra costs for handicapped children; under Hobson, deviations can be justified by reference to services for handicapped children. Under Title I, no account is taken of locally funded compensatory education programs; under Hobson, deviations can be justified by reference to the existence of such programs.

In considering requirements such as Title I comparability and Hobson equalization, it must be understood at the start that no single set of specifications will capture absolutely the concept of equality of educational opportunity. A school system might meet the Title I requirements but fail a Hobson-type requirement; meeting a Hobson-type requirement, it might fail a Title I test; and worse, meeting both, it might still fail some other reasonable test. It is desirable to strive

to identify a requirement that, by according more closely with a general concept of equality, would obviate the need for multiple, conflicting requirements. A judgment on what makes for an acceptably framed requirement can be developed only by testing a number of alternatives against our sense of equality, as informed by court interpretations of the Constitution. In addition, such a judgment must take realistic account of the problems of dealing with data, setting reasonable limits, not only to minimize the effort in data collection, but also to simplify the necessary step of data validation.

Some of the conflicts between the two requirements are not easily explained. In general, for example, impact aid, although it comes from Federal sources, is considered as local funding, much as though it had been raised by applying the local property tax to Federal property. If Impact Aid funds were instead interpreted as Federally-targeted dollars, it could have odd effects in practice. Other conflicts are more understandable. For example, as we have seen in a preceding section, exclusion of longevity pay from the Title I calculation constitutes a judgment about the importance of experience that differs, without sound justification, from other judgments. The Hobson requirement leaves the school district an option to justify deviations in resources to schools for which it can be shown that different economies of scale operate. The Title I accounting method provides only for one justification -- by reference to enrollments at a breakpoint of 100 which, as we have seen, is not in accord with nationwide trends.

The gap between Title I and other requirements that courts might adopt should be closed. Title I regulations could provide that a district

under court order may employ for Title I whatever criteria and reporting process is ordered. At the same time, Title I specifications should be reexamined to determine where greater flexibility would permit closer accord with court requirements. In turn, such changes could provide support for school administrators and boards in obtaining court consent for employing a single standard. Although there is no assurance that particular courts would agree to a revised standard, there is evidence that they have good reason not to agree with the use of the current Title I requirement.

D. The Title I Comparability Reporting Process

Although available data indicate that significant progress appears to have been made in achieving comparability, the current reporting process is neither designed nor implemented in a way that provides confidence in the validity of the data. Any analysis of the data for purposes like those of the present study must be considered as correspondingly limited. Until these limitations are removed, no sound information will be available at the Federal level regarding comparability. Developing methods for assuring that the data are valid would require a more comprehensive examination than was possible in this study. In the conduct of this and prior studies, however, some elements of the reporting process have been identified in which improvements might be sought, and these are described briefly here.

The Reporting Structure

The structure established for comparability reporting is basically sound. A school district completes its report and forwards it for review to its State Education Agency. The SEA then forwards to the Office of Education the report submitted by any district in a Federally designated national sample, together with the report submitted by any district that was found, in the State's review, to have failed the compliance test. Districts that fail the test must also file a revised report with the State, also to be forwarded to OE, showing that it has come into compliance. The value of this structure is that it places responsibility on the States, which are presumed to be in better position to oversee the education enterprise than is the Federal

government. The difficulty is that States manage this responsibility differently -- some taking an even stronger lead than the Office of Education might require; others treating the comparability requirement as an unnecessary intrusion into State and local affairs. These differences can be seen in the number of comparability reports in the national sample that pass State review but fail when reviewed at the Federal level.

This structure is in contrast to an arrangement in which the Federal government by-passes the State in obtaining information from school districts. An example is the Title VI survey conducted by the Office for Civil Rights from 1968 through 1974, when the series was interrupted. Except for some States, which elected to act as a funnel, OCR mails its survey forms directly to school districts and they are returned directly to OCR. Responses are run through an intensive review process. Call-backs are made to fill data gaps and to correct errors, as well as to obtain data from non-respondents. The response rate and the validity of data are very high.

There are two directions in which the relatively ineffectual Title I reporting structure could be changed. The more radical change would be to adopt a procedure analogous to the OCR survey, with processing being carried out at the Federal level. If it is perceived that such a change is the only way of achieving a valid assessment of comparability, one must consider the burden that would be taken on at the Federal level. The OCR survey is a major commitment of resources, in keeping with OCR's

perception of its commitment to enforcement of civil rights. The review, call-back, and editing procedures are costly; in addition, to obtain high levels of responses and data validity requires a length of time that would be inconsistent with the funding-withdrawal option in the comparability review process. On the other hand, the comparability report is much smaller and simpler, and its processing at the Federal level would be a correspondingly smaller undertaking. A basis for reference is available from Lambda Corporation's processing of the Fall 1973 comparability survey. Although handicapped by a late contract start, funding limitations, and constraints on the amount of call-back permitted, the entire survey was processed in two months, and computerized reports were available in a format useful for communicating needs for compliance activities to the States.

If it is felt that the Federal government should not conduct the survey centrally -- either because the States are thought to be the proper locus of responsibility or because a centrally monitored survey would be more costly and less efficient than the present system -- then significantly greater priority must be placed within the Office of Education on making this survey a more meaningful representation of comparability. This includes an enhanced intensive review by OE of the reports it does receive, as well as strong action to ensure that States that pay only lip service to their review of district reports improve their responsiveness to the requirements of the survey.

A middle ground between these two positions might be considered. Districts in the national sample might be required to send duplicate

reports to the State and to OE, which could thus begin review and compilation of these reports concurrently with State review. This possibility raises the issue of the timing and phasing of the survey, to which we now turn.

Phasing

Each Title I district submits its report to its SEA by December 1 (showing data as of a date no later than November 1), and the SEA has until January 1 to report status to OE. If at that time a district remains out of compliance, it still has until March to come into compliance. By that time, a district administrator who is not able to change his figures to the satisfaction of the reviewers may be thought not to have passed his course in formsmanship. But, meanwhile, the educationally disadvantaged children have not received the services that are the very basis of the comparability concept.

In the early years of the comparability survey when the concept of Federal funds as supplementary was not fully understood and when States and districts were not fully aware of survey procedures, the phasing, as outlined above, was perhaps reasonable. At the present time, after several cycles of the complete survey process, there should be no reason for such lack of timeliness. Many of the largest school districts have automated their reports, undoubtedly accessing information available in their data files, soon after the start of the school year. Since school districts should be assigning instructional staff to project and non-project schools according to the known requirement for comparability, the survey report form should, in general, be simply

a demonstration that the district has done its job correctly. Unfortunately, some districts encounter unpredictable over- and under-enrollments in schools, which could make it necessary to reassign some staff only after enrollment figures are known. Other than in these circumstances, for which allowance could be made in a revised regulation, it appears reasonable that a school district complete its form by November 1 if it is reporting on the status of schools as of October 15. In practice, the procedure may have been to wait until October 15 for the system to settle down, tote up the figures, determine comparability status, if necessary reassign staff, and then calculate the formal comparability data to be submitted. This entire process should be carried out prior to the "as of" date on which the report is presumed to be based. If it is judged that school systems, in general, will not have settled down by October 15, then the "as of" date could be made November 1.

At the State level, checking the reports once they are completed is an extremely simple task and, since the number of clerical staff in an SEA is, within rough approximation, related to the size of the State and the number of LEAS, there is no reason for more than a week or two to be allotted to this review. It is possible for a State, in the month currently allotted, to review reports, find districts not in compliance, advise the districts, and obtain new reports; and although, of course, there would not be evidence to support the conjecture, it is possible that some of these adjusted reports are currently regarded as original reports "as of" the date prior to November 1 on which all schools in a district were to have had comparable allocations.

The Office of Education is responsible for two functions with respect to the Title I comparability survey. One is to employ the data to support an assessment of trends in comparability in the nation, and the other is to assist in the technical assistance, monitoring, and enforcement of the regulation. The former is fairly independent of survey phasing, since unless there is external pressure to report early, a general assessment could be produced months after the date of the reports. For monitoring and enforcement, however, the earlier the better; and conversely, the longer the period between report and action, the greater will be the conviction that the Federal level really does not care about comparability. Accordingly, there is additional support for requiring reports on the national sample to be directed to OE for review simultaneously with their receipt at the SEA. This will make it possible for OE to take timely action in advising States of shortcomings in the reports, as well as to begin what should be its assessment of comparability status. How effectively these functions can be carried out depends on the coverage of school districts available to OE, which is discussed in the next subsection.

School District Coverage

The sample used for some time in the comparability survey is the sample used for the Consolidated Program Information Report (CPIR), which was designed to obtain detailed information, on a range of topics, from districts receiving financial aid from various Federal programs. The sample includes slightly more than 1,000 districts, stratified by size, with districts of more than 125,000 enrollment being

selected with certainty. It is difficult to establish without further analysis the degree to which the "borrowed" sample constitutes a fair representation of the Title I universe for which it is employed in the comparability survey. One aspect of the sample that is open to criticism is that it is made known to the States before comparability reports are prepared, which thus makes it possible for these reports to be prepared and reviewed with more care than may be applied to districts not in the sample.* This aspect of the sampling process thus constitutes an example of the Heisenberg principle, in which the subject under examination changes as a result of the attempt to conduct the examination.

Although it may be desirable to draw a sample strictly designed to represent the Title I universe, the sample currently used in the survey is probably adequate for the purposes to which it is to be put. A more severe difficulty arises from the way in which comparability regulations are specified. As noted above, for instance, the stipulation that schools can be grouped according to two enrollment breakdowns leads, in a number of ways, to less comprehensive coverage of certain districts, or of certain school groups in some districts. Other specifications have the same effect. The treatment of school size breakdowns proposed earlier, for instance, would increase coverage by making it possible to

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* This requirement came about during consideration by the Office of Management and Budget of the forms to be employed in the mandated survey. OMB pointed out that the only purpose of longevity pay data was to make it possible for the Commissioner to determine whether such pay should be incorporated into the comparability test. Since the Commissioner would review only those reports in the national sample, it was argued only those districts should report longevity pay data. Given this argument, it is then necessary to advise districts ahead of time whether they were or were not in the sample.

establish comparability of small project schools even if there were no non-project schools in the same district. Consideration should be given to other ways in which greater coverage can be obtained, both at the Federal and State levels, for schools and districts for which comparability need not be demonstrated.

An excellent example of this problem arises in school districts in which all schools operate Title I projects. On the face of it, it is impossible to determine "comparability" in the defined sense. Yet, it is possible that a district is, in a real sense, not receiving comparable funding. Assuming that the district is providing "comparable" funds to all its project schools, it is still possible that the State is shorting the district relative to others. In this example, intra-district equity of allocations still leaves the district as a whole, and each of its schools, short of a comparable allocation of State and local funds. The extent to which this may be occurring cannot be determined either from the comparability survey or any other mandated survey. It should be noted that the same problem exists in districts that are reporting. The problem, which is one of policy rather than procedure, is whether the Federal government perceives the disparity as sufficiently large to merit an expansion of the definition of "comparable," so that it includes funds over which the State rather than the district has control.

Steps for Improved Reporting

Over the several years represented by the series of Title I comparability surveys, a number of sources of error in reporting have

been identified, some of which have been reduced in intensity by technical assistance provided by the Office of Education, or as a natural by-product of increasing local familiarity with reporting requirements. Whether or not major modifications are considered, there remain some minor steps by which the value of the reports can be increased.

- Current regulations require districts to provide detailed data only on project schools, while the data on non-project schools are submitted only in the form of an average of all such schools. In order to compute these averages, the school district must collect and manipulate data on non-project schools in a method identical to that employed for project schools. There is no reason, except to save trivially small clerical time, for the data to be submitted for non-project schools in the form of averages rather than school-by-school. Some school districts have elected to submit detailed rather than average data on non-project schools, and errors have been detected in the editing process. It is reasonable to assume that districts not so electing may also miscalculate, which would throw off the entire report. It is strongly recommended that the data on non-project schools be submitted school by school, creating a burden only of typing information that must already be available in easily transcribed form.

- Enrollment figures in the Title I comparability survey require reconciliation with purportedly similar data from other sources, such as the OCR survey. This kind of reconciliation could be relatively easily performed by computer by OE. If inconsistencies persist, a more

determined audit and monitoring program should be put into effect.

- Special attention must be paid by SEAs and the Office of Education to revised reports -- those filed following an initial finding that a district is out of compliance. In some instances in the past, LEAs have adopted ingenious ways of achieving compliance -- including restructuring the teacher salary schedule to increase base pay but to reduce longevity; changing only the number of teachers but not the salaries (where only the pupil:staff ratio was below limits), or vice versa; shifting the sources of salary from Federal to local, or as one LEA representative stated, "strictly a bookkeeping procedure."

- Each LEA that is found out of compliance in its original report on comparability is required to submit a revised report demonstrating that it has come into compliance on the salary:pupil and pupil:staff ratios. In addition, under a provision thought to be a penalty for bad performance, it must collect and display data on "other instructional costs," such as textbooks, demonstrating for each project schools that the per-pupil allocation is no less than 95 percent of the non-project average. Unaccountably, the reports produced by the Office of Education for the Fall 1974 survey show no figures at all for these costs. It is conjectured that school districts do not have sound data available on these costs and instead submit data designed to meet comparability (if indeed they submit data at all) and that, accordingly, OE does not think these data important (or valid) enough to be produced in the report.

The overlap in district coverage and the inconsistencies in data between the Title I comparability survey and the OCR survey suggest that there may be value in combining them. The reduction in district reporting burden could be large, and a considerable reduction in total HEW effort would be achieved. Changes would have to be made in the structure of the reporting process of the two surveys, as well as in the sampling technique. Title I comparability information is needed within a short time; data from the OCR survey for 1974-75 is not available in validated form, 21 months after the collection date. On the other hand, the Title I survey has not been subjected to the intensive editing and verification process applied to OCR information, a process that accounts for some of the difference in schedule. The comparability survey requires data from the universe of Title I districts (except for those exempt for one or another reason), and it requires data on the numbers and salaries of instructional staff. The OCR survey is currently being redesigned, but presumably it will continue to collect information from a (large) sample of districts; racial-ethnic data on staff are now collected by the Equal Employment Opportunities Commission. The approach to be taken in reconciling these differences would probably take the form of a single but variable form, with some elements of use for both OE and OCR, and other elements of use for one or the other office.

Regulation and Enforcement

It is not within the scope of this study to survey past and present enforcement activity, but the topics reviewed here do impinge on enforcement policy. It is difficult to enforce a regulation that requires,

for example, that a school serving 25 students be comparably staffed with a school serving 75 students, when national trends show that there is, on the average, a large difference in schools of these sizes. It is particularly difficult to enforce a regulation whose only threat is complete withdrawal of Title I funds -- both because noone wishes to withdraw support from the very children the program is supposed to assist, and because few wish to face the political consequences. As a result, the remedy is almost never carried out in practice, the threat becomes empty, and the gap between goals and compliance grows.

To create effective enforcement policy requires putting into effect two simultaneous programs: one is to modify the specifications of the regulation to accord with justifiable school districts practices; the other is to devise more realistic penalties. The general concept of a Graduated Penalty Schedule (GPS) has been advanced as an alternative, and merits further consideration.* In concert with the development of such a scheme, procedures might be arranged, similar to those in the SAFA program, for appeal in special circumstances.

* See A Decade of Title I: From Problems to Progress, by A. L. Ginsburg, G. Hendrickson, and J. N. Killalea, Office of the Assistant Secretary for Planning and Evaluation, June 1976.

IV. CONCLUSIONS AND RECOMMENDATIONS

The examination in this study leads to the following conclusions and recommendations:

Components and Data

- The current exclusion of longevity pay from the comparability test constitutes an implicit judgment that staff experience is not important in serving educationally disadvantaged children -- a judgment that is at variance with others who maintain that experience is important and that consequently places a greater weight on degree level of instructional staff. In the absence of an accepted position one way or the other on the matter, the comparability test should be neutral with respect to experience. Neutrality requires that experienced teachers should be approximately evenly distributed throughout a school system's project and non-project schools. The fact that half of the comparable school districts in the national sample for 1973 would change to not comparable if longevity pay were included in the test indicates that actual staff assignments are not neutral. Accordingly, longevity pay should be included in the test.

- The school size breakpoint currently employed fails by a wide margin to account for the great differences in per-pupil resources in schools of different size. Assuming that these differences are not the result of bias in favor of small schools, the current breakpoint must be modified. Adding one or more breakpoints would improve the agreement between the school size provision and actual practice, but would not account for all the variation. An alternative presented in this study is to develop factors that would adjust pupil resources across the continuum of school sizes. Whatever method is employed, it may be desirable to incorporate a provision by which a school district can demonstrate that special circumstances justify a departure from the strict interpretation of the regulation.

- The requirement to report "other instructional costs" apparently receives little attention from either school districts or HEW. Since this cost component is a very small part of overall educational resources, the provision should be eliminated unless it can be enforced as the penalty it was intended to be.

- The current penalty of complete funds withdrawal from districts not in compliance is an unrealistic mechanism for correcting whatever degree of noncompliance may persist. Strong consideration should be given to a graduated penalty schedule (GPS), aimed at withdrawing Federal support in an amount related to the degree or severity of noncompliance.

- Discrepancies in data submitted in response to the Title I survey frustrate attempts at analysis and possibly indicate deliberate misreporting. Attention should be given to ways of reducing such discrepancies, including more intensive review, as well as coordination with the audit process. Consideration should be given to combining the Title I and OCR surveys into a unified reporting system.

- Any modifications to the comparability requirement should be designed to lessen the gap between the Title I standard and alternative specifications that may be set by the courts. Moreover, there is merit in making it possible for a district under an interschool equalization order to employ its required reports for Title I comparability purposes.

Compliance

- This study did not exhaustively analyze the status of compliance with the comparability regulation. Nonetheless, there appears to have been substantial improvement from 1972 to 1974. The extent of actual compliance cannot be determined without validation of the data.

- In addition, average allocations to minority children in Title I schools appear not to discriminate against them relative to their majority schoolmates or to students attending non-project schools.

Survey Process and Coverage

Overall, it is recommended that greater effort be applied to ensuring that the reporting system will produce a valid assessment of the status, nationwide, of Title I comparability. At present, the assessment, if it could be taken at face value, would indicate a high level of compliance with the regulation. A compilation of such reports, without accompanying verification procedures, casts doubt on the assessment. Several steps are suggested:

- The phasing of the comparability survey extends unnecessarily the length of time in which status is indeterminate. The phasing should be accelerated.

- The Federal review of reports from national sample districts (and from districts that fail the original test) should give greater emphasis to obtaining valid data through editing and call-back procedures normal for a survey of this importance. This effort should be coordinated with (and assist in the guidance of) an active on-site audit operation.

- Consideration should be given to expanding the purview of the comparability regulation to assure that States do not allocate their funds in a way that supplants Federal aid.

Finally, change in the comparability regulation should not be undertaken on a piecemeal basis. Some of the procedural recommendations, such as increased data checking, can be put into effect immediately without altering the reporting process or impacting on districts. All other suggested changes, and others not studied here, should be carefully weighed in the context of a comprehensive analysis that takes into account the presumed advantages, the availability of required data, and the burden on the reporting districts.

APPENDIX A

TITLE I COMPARABILITY: TRENDS IN COMPLIANCE

The Spring 1973 survey, the first to employ the standardized forms and instructions, was understandably not recognized fully by State and local agencies as a requirement that entailed adherence in a serious way. Instructions stipulated that reports (as of the end of the school year) were to be submitted by September 15, 1973, but only 13 States had submitted reports to OE by that time. In fact, data were still being submitted three months later. Finally, a date of December 17, 1973 was set as a cutoff for admission of data to be included in the file created for OE to analyze the status of compliance with the comparability requirement. Even then, four States submitted reports after that date. A number of States submitted reports for less than their full share of the national sample, and nationally only half of the district reports were received. In addition, some States submitted only for districts in the national sample, failing to forward reports on districts that had failed the earlier test of comparability. Submissions were not received from Florida, Minnesota, and Montana. It was obvious that most of the States had failed to give the comparability reports more than a cursory review, since during the editing process applied to the national sample reports a number of errors were detected by an "eyeball" review. Provisions were not made in the processing operation for follow-up of State agencies, so it is not possible to estimate the extent of error in the reports overall, but it can be assumed that errors were widespread.

As for comparability itself in Spring 1973 -- as far as it can be determined from a fragmented sample in which data entry errors were the rule rather than the exception -- 12 percent of the sample districts were not comparable. This is not high relative to later reporting periods, as will be confirmed below, but the result must be tempered by the fact that only half of the reports in the national sample were received. It is reasonable to expect that reports not received would actually have shown a greater percentage of failure to comply with the regulations.

It has been noted above that the survey of comparability status for the Spring of 1973 was being conducted in the following months, extending into December. Meanwhile, the approved standardized format had been transmitted to States for distribution to local education agencies, with January 1, 1974 set as the date for receipt by OE of State summary reports, as well as reports on each LEA in the national sample and each other LEA that failed its original comparability test. Because many States were late in submission of reports in the Spring survey, there was a confusing time overlap in the two surveys. Nonetheless, there was a significant improvement in the number of States that met (or missed by only a few days) the January 1 due date. In addition, it is not clear if States submitted reports on all of their districts in the national sample because OE did not know which districts may have been exempted from the reporting requirement for various reasons.*

* Some districts are exempt from reporting if, for instance, all their schools are conducting Title I projects, leaving them no basis for comparison.

This difficulty is but one of the reasons that the national "sample" cannot be used to project status on the universe of Title I districts.

In the Fall of 1973 survey, a number of checking procedures were instituted, including manual editing, computer editing, and follow-up with the State education agencies. Although the level of effort that could be applied to these checks was very limited because of budget considerations, these steps enhanced the validity of the survey and increased the usefulness of the data it obtained. Follow-up of non-respondents was carried out for the first time, resulting in receipt of reports for 85 percent of the districts in the national sample, compared with 50 percent in the Spring 1973 survey.

Evaluation of comparability compliance for the Fall of 1973 must take into account the difference in the quality of data relative to that in prior surveys. In the Spring of 1973, when no checking other than internal editing was carried out, 24 States appeared to have no districts out of compliance. In the Fall of 1973, this number dropped to 22. Nationally, as reviewed by OE, 12 percent of the districts in the national sample were not comparable in Spring 1973, while 13 percent were not comparable in Fall 1973. In considering the apparent lack of progress, however, it must not be forgotten that in the Spring survey only half of the required reports were received and that a significant number of reports not received must be assumed to reflect lack of comparability. In the Fall, when 85 percent of the required reports were received, the fact that the percentage of districts out of compliance remained at nearly the same level as in the Spring represents a considerable advance.

By the Fall of 1974, it could be expected that the reporting and review system would have stabilized for several reasons. For one, the confusion that arose from two surveys being conducted in the Fall of the preceding year was not present. In addition, the same form and instructions were being applied as standardized requirements for the third time. Third, the Office of Education had taken a more assertive role in technical assistance and in monitoring than had been the case in earlier years. The education system as a whole had by this time a somewhat clearer perception of the intent of the Title I program to assist the educationally disadvantaged child. Unfortunately, detailed inspection of the OE reports indicate a number of flaws that cast doubt on the validity of the data.

Taking the results on their face value, however, they show significant improvement in some areas and a continuation of gradual improvement in others. Reporting was complete for every State except New Jersey, South Dakota, Vermont, and Washington State. In the national sample, 98 percent of the required reports were received, only 8 percent of which indicated failure to bring their schools into compliance with the comparability requirement. The number of States with no districts out of compliance dropped again -- to 20 -- compared with 24 and 22 in the two earlier surveys. But this is no longer puzzling; rather, it tends to reflect the high level -- 98 percent -- of report submissions.

Of the largest States, the percentage of districts in the national sample that were not comparable are as follows:

California	6 percent
Illinois	0
New Jersey	9
New York	4
Ohio	0
Pennsylvania	5
Texas	18

Table I shows, for the three survey years and for each State and the District of Columbia, the percentage of each State's districts in the national sample that were actually received, the percentage of these reports that indicated noncompliance, and the value of the Comparability Index. This Index provides an alternative way of viewing comparability in a State (or district) other than simply as the percentage of districts that are not comparable. At the district level, the Index is constructed by calculating the amount by which resources applied to each Title I school fall below the average of non-project schools and then averaging over all Title I schools, weighting each school by its enrollment. At the State level, the Index aggregates district values, again weighting by enrollment. The result provides an improved indication of the relative amount by which resources expended for the average Title I student in a State deviates from allocations to students in other schools. In Colorado, for example, although 14 percent of the sample districts were not in compliance with the comparability requirement, the Index value of .991 indicates that Title I students in the State, as a whole, are receiving very close to the average of the resources applied to all other students.

Table I. Title I Compliance, 1972 to 1974

	SPRING 1973			FALL 1973			FALL 1974		
	PCT REC'D	PCT NOT COMP	COMP INDEX	PCT REC'D	PCT NOT COMP	COMP INDEX	PCT REC'D	PCT NOT COMP	COMP INDEX
Alabama	100	0	.986	100	0	.989	100	8	.974
Alaska	67	50	.978	67	0	.997	100	0	-
Arizona	91	10	.990	100	4	.993	100	7	.990
Arkansas	70	0	.990	100	0	.990	100	8	.989
California	54	0	.991	94	9	.994	93	6	.994
Colorado	52	15	.994	92	10	.986	100	14	.991
Connecticut	79	0	.994	79	0	.988	100	0	.990
Delaware	75	33	.990	75	0	.990	100	40	.965
Dist. of Col.	100	100	.978	100	100	.983	100	100	.951
Florida	0	-	-	95	30	.982	100	5	.992
Georgia	100	0	.993	100	17	.986	100	19	.979
Hawaii	100	0	.983	100	0	.988	100	0	.985
Idaho	0	-	-	100	0	.980	100	0	.962
Illinois	52	7	.986	100	24	.988	100	0	.985
Indiana	0	-	-	100	15	.986	100	6	.986
Iowa	33	0	.991	33	0	.995	100	0	.996
Kansas	55	0	.987	73	13	.992	100	25	.989
Kentucky	38	0	.989	46	17	.988	100	3	.993
Louisiana	84	56	.973	100	21	.981	100	5	.977
Maine	83	0	1.000	100	0	1.000	100	0	-
Maryland	100	60	.972	100	58	.977	100	42	.976
Massachusetts	66	5	.988	84	0	.994	100	3	.989
Michigan	57	19	.988	55	8	.994	100	6	.988
Minnesota	0	-	-	89	6	.995	100	0	.995
Mississippi	90	0	.971	95	0	.988	100	9	.981
Missouri	50	42	.985	58	14	.991	100	0	.994
Montana	0	-	-	25	0	.996	100	0	.996
Nebraska	75	0	1.000	100	50	.997	100	0	.996
Nevada	67	0	.995	100	0	.997	100	0	.984
New Hampshire	75	0	.993	75	0	.997	100	0	.994
New Jersey	0	-	-	88	16	.982	92	9	.992
New Mexico	56	33	.979	56	0	.991	100	0	.993
New York	41	0	.996	98	12	.996	100	4	.994
N. Carolina	53	56	.973	100	17	.982	100	0	.983
N. Dakota	20	0	.956	20	0	1.000	100	0	.995
Ohio	49	0	.997	96	2	.997	100	0	.998
Oklahoma	26	17	.988	26	0	.986	100	0	.993
Oregon	56	20	.988	89	38	.984	100	58	.977
Pennsylvania	0	-	-	100	0	.991	100	5	.992
Rhode Island	80	50	.986	100	33	.983	100	40	.982
S. Carolina	39	86	.973	100	20	.985	100	20	.976
S. Dakota	80	50	.664	80	0	-	17	0	.999
Tennessee	67	38	.950	100	42	.984	100	16	.988
Texas	46	0	.981	59	28	.987	100	18	.985
Utah	22	50	.975	100	0	.994	100	0	.989
Vermont	67	0	.999	100	0	.987	33	0	.993
Virginia	95	0	.978	95	10	.993	100	8	.991
Washington	73	0	.990	91	30	.984	85	18	.986
W. Virginia	100	0	.964	100	25	.984	100	14	.976
Wisconsin	72	11	.996	96	8	.994	100	3	.995
Wyoming	100	0	.991	100	0	1.000	100	0	.993
NATION	50*	12		85	13		98	8	

* The result of dividing 526, the number of reports received, by the number of reports that should have been received; both from the states that provided some reports and from those states that did not report at all.

Several comments can be made on the basis of the trends exhibited in Table I. The less populous States and those in the South and Northwest are farthest from full compliance with comparability requirements. Some States, such as Georgia, seem to have weakened over time (on the criterion of percentage of noncomparable districts as well as according to the Comparability Index). Some States, such as North Carolina, have moved sharply into compliance in terms of report submission and percentage of districts comparable over the three survey periods, but have done so without significantly improving the Comparability Index. In South Dakota, there is a sharp decrease in the percentage of reports received but very significant improvement in the comparability status of the reports reviewed, still another reflection that there is undoubtedly valuable information in the reports that have not been actually reviewed at the Federal level.

There is special interest in examining certain within-State issues, such as the comparability status of large cities, in which disadvantaged children are most numerous and concentrated. Table II presents a summary view of the comparability status for some of the nation's largest cities; it is not possible to list all the largest because several of these are delinquent in submitting reports. The table presents some data from the Fall 1972 survey which, although open to debate as to validity, provides at least a starting point for comparison.

It can be seen that both in the Fall 1972 and the Spring 1973 survey periods, the nine cities listed in the table fell far short of compliance

Table II. Comparability in Selected Large Cities
(Percent of All Title I Schools Not Comparable)

	Fall 1972	Spring 1973	Fall 1973	Fall 1974
New York	16	N/A	1	0
Detroit	49	37	0	0
Houston	42	0	0	9
Baltimore	78	44	40	28
Dallas	N/A	12	0	0
Cleveland	6	0	0	0
District of Columbia	N/A	34	9	36
Memphis	100	67	12	0
San Diego	48	N/A	0	0

with the comparability requirement. This situation improved by the Fall of 1973, with all but three cities having zero schools not comparable, although Baltimore still has 40 percent of its schools out of compliance. The improvement by the Fall of 1974 is not remarkable, except that both the District of Columbia and Houston worsened and Baltimore improved only slightly. This spotty picture is fairly representative of large cities: many not submitting reports adequate for inspection; many coming into full compliance; and some having difficulty doing so. The failure of large cities to come into compliance is important because of the numbers of children affected by the shortfall, but it is puzzling in view of the flexibility these cities have to reassign their many teachers, and in view of the data collection and processing staffs cities typically have.

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Generally, the trend over time shows an encouraging nationwide increase in compliance with comparability requirements. But it is important to place these results in a wider context. It cannot be stated with high confidence that the data submitted by the States and localities for these surveys are a true reflection of the resources that are actually being applied to disadvantaged youngsters. Whatever improvement has taken place in the reporting system or in the actual allocation of resources will not be known until the system is augmented by an effective auditing process that establishes the connection between paper and reality.

APPENDIX B

INCONSISTENCIES IN REPORTING ENROLLMENT

INTRODUCTION

In preliminary analyses of the results of the Spring 1973 Title I comparability survey, it was noted that there were discrepancies between the enrollment data as submitted in that survey and the enrollment data submitted in the Fall 1972-1973 survey for the Office for Civil Rights. There were a number of possible reasons for such discrepancies, not the least of which is that the surveys were taken at different times in the school year. It was, therefore, decided that the results of the Fall 1973 Title I survey would be compared with those of the Fall 1973 OCR survey (which had the same reporting date), to attempt to narrow the uncertainty regarding the source of discrepancies. This note presents the results of that comparison.

ANALYSIS

A manual review of five districts -- Huntsville, Alabama; Brevard County, Florida; Gary, Indiana; Vermilion Parish, Louisiana; and Benton Harbor, Michigan -- was undertaken of the data submitted in the two surveys. The districts were selected on the following criteria:

- Each district had about 20 to 40 schools, representing a district of interest size but still amenable to handle analysis.
- In its Title I report, each district had supplied information on non-Title I schools (regulations do not require the submission of this data, and relatively few districts supply it).

For each district, the following data are available, on a school-by-school basis:

- From the Title I survey, a single enrollment number.
- From the OCR survey:
  - A total enrollment
  - Special education enrollment
  - Number of handicapped children
  - Data permitting rough estimates of kindergarten pupils.

Our approach was to find, for each district, the method of counting enrollments from OCR data that most closely matched the given Title I enrollment. That is, a district's Title I report might show an enrollment for a given school of 343, while OCR report shows 372 for the same school; if the OCR data base indicated that there were 29 children enrolled in special education classes, the match is perfect under the assumption that Title I enrollment equals OCR enrollment less special education enrollment. Inspection of all schools in a district led to the selection of one or another of possible explanations; this choice was then used for analyzing all the schools in the district.

The reason that kindergarten pupils are examined in this analysis is that districts vary in the methods they use to report these students (and their teachers). The estimates for kindergarten pupils are very approximate, since the OCR survey includes individual grade enrollments only for grades 3, 6, 9, and 12. For schools offering kindergarten services, an estimate was made of the number of kindergarten pupils in the school, based on OCR data; this was divided in half, reflecting the amount of possible difference that could arise from treating students as one-half in Title I reporting, while treating them as full pupils in OCR reporting.

For each district, a table was constructed showing these data. The rows are individual schools in the district, grouped first by grade span and then by non-Title I and Title I. The columns are:

Column 1. Total OCR enrollment.

Column 2. Approximately 1/2 Kindergarten, computed from the OCR data as indicated above.

Column 3. Special education children, from the OCR data.

Column 4. Handicapped children, from the OCR data.

Column 5. "Best Match." The meaning of this column differs for different districts and is defined in the column heading.

Column 6. Fall 1973 Title I enrollment.

Column 7. (Only on Tables III and V). Percent difference between columns 5 and 6. (This was not calculated for the other districts either because of small differences or inadequate data).

It is clear that there are widespread differences among districts in the way pupils are counted. In almost all (but not all) cases, students categorized as "handicapped" in the OCR survey were included in the Title I count. Of the three districts which offer kindergarten services, two counted each student as one and the other appears to count each as one-half student. In most cases, special education students were excluded from the Title I count -- which is proper if the students are in separate classes -- but there are several schools for which special education students appear to be included in the Title I count; thus, within a district there is sometimes inconsistent reporting.

Of the five LEAs, Benton Harbor, Michigan (Table B-1) was the only one for which there is substantial enrollment agreement between the two data bases. However, the exact agreement on most schools more clearly illustrates the different reporting procedures. The discrepancy at Hull School would be removed if the 18 handicapped students were subtracted. (However, Martindale School clearly includes their handicapped pupils). The exclusion of pre-kindergarten pupils at Bard and Boynton would seem to explain those discrepancies. A still different problem arises in this LEA. Three schools are present in the OCR data base but were not included in the Title I report. These schools probably would be in a separate category for schools with enrollments of "100 or less" for comparability purposes (Stump-Nickerson enrollment becomes 75 if handicapped students are omitted); therefore, the LEA would not be required to submit detailed data if all are non-Title I schools. Nevertheless, the LEA is required to include a count of these schools with their status (Title I or not) on its "Part A. General Information" (Form 4560), and did not do so. Another school (North Shore) with enrollment of 99, was improperly included among the non-Title I schools in the "over 100" category. Thus, if any one (or all) of the omitted schools had a Title I program, a comparability comparison should have been made.

Enrollments in Vermilion Parish, Louisiana (Table B-2) were also in substantial agreement but did not match exactly, differing by a few pupils for each school. Special-education students appear to have been excluded from the Title I enrollment, except at Herod Elementary and Abbeville High School. There was no evident pattern to the discrepancies.

There are significant disagreements between the two data bases for Brevard County, Florida (Table B-3), and the percent differences for each school are shown on the table. The Title I data base figures are lower than the OCR data base figures by 0.4% for the non-Title I schools, and by 0.8% for the Title I schools. The general tendency would thus be to raise the per-pupil allocations for Title I schools, relative to the non-Title I average, by about 0.4%. However, in this case, the OCR figures are somewhat suspect because there is a 3.44% difference between the district level enrollment figure and the summation of school records.

Gary, Indiana (Table B-4) seems to have generally poor agreement between the two data bases. The best OCR fit to the Gary Title I data is obtained if it is assumed that kindergarten pupils were counted as one-half. Since our estimates of kindergarten enrollments are highly inadequate, most differences are understandable. One school (Bethune), however, has an 18% enrollment difference and would become non-comparable if the OCR enrollment figure was used (assuming the same teachers).

Huntsville, Alabama is the district of the five with the most problems, and a column showing percent differences has also been added to Table B-5. Like Gary, there is not good enrollment agreement between the two sources, but Huntsville has no kindergarten to cloud the issue. Also, unlike Brevard County, the OCR figures are internally consistent. Including the special education students gives a reasonably close agreement for non-Title I schools, with a RMS discrepancy of 1.2%. However, the Title I schools have far greater discrepancies. In fact, there is a definite correlation between the enrollment agreement of a school and whether or not it is a Title I or

non-Title I school. Furthermore, the Title I schools have an average of 3.4% lower enrollments on the Title I data base than they do on the OCR base, while the non-Title I schools average less than 0.6% lower enrollments. The direction of this tendency is to bring more schools into comparability. In fact, four schools (Ridgecrest, Rolling Hills, W. Huntsville, and Lincoln) would be non-comparable if the OCR figures were used, assuming no change in teachers. In addition, because there are more special education students in Title I schools, it is advantageous for comparability purposes to include these students and their teachers. The effect will be to lower student-teacher ratios in Title I schools relative to non-Title I schools. A statistical test on the elementary schools reveals that the probability that the enrollment deviations for Title I and non-Title I schools come from the same population is about one in 100,000,000.

COMMENTARY

This analysis focused on two issues. One is the degree to which confusion as to the proper method of counting has led to discrepancies in reported data. The other is whether or not there are any cases of possible deliberate distortion. On the first issue, this brief review offers clear evidence that there are misunderstandings which lead to discrepancies of some magnitude. On the second issue, our sample is too small to provide a meaningful statistical analysis. In both areas, we confine our comments to apparent problems and do not claim that the

observations made here constitute trends that would hold up under a more thorough analysis.

The analysis was restricted to student enrollments because faculty data, while available on the Title I survey data base, are no longer present in the OCR survey base. This is particularly unfortunate, since the analysis of the Spring 1973 Title I survey, when compared with the Fall 1972 OCR survey, showed that there were much larger discrepancies in the teacher data than in the student data. Teacher data from the EEOC survey would be required to support a consistent analysis on numbers of staff as reported in the two surveys.

Anomalies resulting from different ways of counting kindergarten students should also be examined more closely. It appears that students may be counted as half-time, while teachers may have been counted as full-time. The counting frequently seems to have differed between schools in the same district. And, while the counting method may properly vary between the two surveys, within each survey there seem to be inconsistencies.

Some confusion also seems to exist regarding what constitutes a school reporting unit. Tables I, II, and V illustrate some of these different reporting practices. For example, In Benton Harbor, two schools (Hull and Sorter) are listed as one unit each (grade span K-8), while in the OCR report they are listed as two schools (K-6 and 7-8). It appears desirable to promulgate clearer guidance on the above matters than has been available.

To carry out a manual analysis of this kind for many districts would be uneconomical, because of the need to perform manual manipulation of the data. A computerized technique can readily be developed to conduct the same analysis. The value to the auditing and compliance functions would be inestimable.

Whether manual or automated, the analysis is greatly facilitated by data on non-project schools, which is currently not required to be submitted. In particular, an analysis of whether a different method has been used to count Title I and non-Title I enrollments requires these data. Since each district must go through the same detailed data gathering and calculations for all its schools, it appears reasonable to require districts to submit detailed data on all schools in its Title I comparability report. This would add only to the LEA's clerical task.

In summary,

(1) Clarification and guidance is needed in the Title I comparability directives and in the instruction booklet in the following areas:

- Method of counting kindergarten pupils and their teachers
- Inclusion of pre-kindergarten students
- Method of treating special education and handicapped students
- Inclusion on Form 4560 of all schools, even if there are no projects in that category
- Definition of what constitutes a school reporting unit

(2) Strong consideration should be given to requiring the submission of detailed data on all schools, both project and non-project.

(3) An automated system should be developed for enrollment comparisons and other data checking.

TABLE B-1

BENTON HARBOR, MICHIGAN

Grade Span K-6 Non-Title I Schools	1973 OCR SURVEY DATA					Fall 1973 Title I Enrollment
	Total Enrollment	~ 1/2 Kinder-garten	Special Education	Handi-capped	"Best Match" (1)-(3)	
	1	2	3	4	5	6
Fairplain East	271	15	23	0	248	248
Fairplain NE	245	15	10	0	235	235
Fairplain NW	172	10	0	0	172	172
Fairplain West	227	10	28	0	199	199
Hull (K-8)	299 + 318*	15	0	18	617	599
Johnson	164	10	19	0	145	145
Lafayette (K-3)	163	20	8	0	155	155
Martindale	246	15	0	10	246	246
Millburg	135	10	0	0	135	135
North Shore (4-6)	99	0	0	0	99	99
Pearl	139	10	0	0	139	139
Sorter (K-8)	316 + 108*	20	0	0	424	424
Title I Schools						
Bard (OCR includes PK)	627	40+PK	36	0	591	530
Boynton (OCR includes PK)	404	20+PK	0	7	404	344
Calvin Britain (K-3)	430	50	10	0	420	420
Columbus (K-3)	325	45	0	0	325	325
Martin L. King (4-6)	456	0	0	0	456	456
Henry C. Morton	569	40	0	0	569	569
Seeley McCord	594	45	0	1	594	594
Sterne Brunson	516	40	0	20	516	517
Grade Span 7-8						
Non-Title I						
Fairplain JHS	492	0	0	0	492	492
Title I						
Benton Harbor JHS	689	0	70	0	619	617
Schools Not Included in Title I						
Sodus Elementary	64	5	0	0	64	
Spinks Crns Elem (K-3)	51	5	0	0	51	
Stump-Nickerson Elem	119	10	15	29	104	

*Note: OCR lists Sorter and Hull as two schools each with grade spans K-6 and 7-8.

TABLE B-2

VERMILION PARISH, LOUISIANA

Grade Span 1-6 / Non-Title I Schools	1973 OCR SURVEY DATA					Fall 1973 Title I Enrollment
	Total Enrollment	~ 1/2 Kindergarten	Special Education	Handicapped	"Best Match" (1)-(3)	
	1	2	3	4	5	6
Dozier Elementary	273		0	0	273	274
Forked Island Elementary	109		0	0	109	109
Seventh Ward Elementary	267		0	0	267	269
Title I Schools						
East Abbeville Elem	583		0	0	583	578
Eaton Park Elementary	636		13	0	623	619
Kaplan Elementary	679 + 137*		12	0	804	806
Herod Elementary	694		7	0	687	693
Grade Span 7-9						
Non-Title I (none)						
Title I Schools						
Kaplan High School	877		9	0	868	860
Abbeville Junior High	700		13	0	687	690
Grade Span 10-12						
Non-Title I (none)						
Title I Schools						
Abbeville High School	1205		11	0	1194	1260
Grade Span 1-12						
Non-Title I Schools						
Pecan Island	139		0	0	139	139
Henry High School	195		0	0	195	195
Meaux High School	266		0	0	266	264
East Broussard	394		0	0	394	394
Indian Bayou	189		0	0	189	189
Title I Schools						
Erath High School	882		0	0	882	879
Maurice High School	616		14	0	602	611
Gueydan High School	764 + 89*		6	0	847	848

no kindergarten

*Note: OCR lists a separate school for Gueydan 2nd grade and a separate school for Kaplan 6th grade.

TABLE B-3

BREVARD COUNTY, FLORIDA

Grade Span K-6	1973 OCR SURVEY DATA					Fall 1973 Title I Enrollment	% Diff.
Non-Title I Schools	Total Enrollment	~ 1/2 Kinder-garten	Special Education	Handi-capped	"Best Match" (1)-(3)		
	1	2	3	4	5	6	7
Allen Elem	575	40	0	38	575	575	0
Apollo Elem	575	45	14	34	561	554	-1.2
Aububon Elem	736	50	0	77	736	710	-3.5
Cape View Elem	729	55	9	58	720	720	0
Carroll Elem	797	55	8	41	789	791	+0.3
Coquina Elem	842	60	28	63	814	826	+1.5
Croton Elem	662	50	18	0	644	636	-1.2
Fairglen Elem	769	60	12	0	757	748	-1.2
Freedom Seven Elem	610	40	19	0	591	582	-1.6
Gemini Elem	672	50	4	21	668	665	-0.5
Harbor City Elem	620	45	11	12	609	608	-0.2
Holland Elem	943	65	8	32	935	931	-0.4
Indialantic Elem	717	45	0	0	717	713	-0.6
Mila Elem	660	40	67	0	593	594	+0.2
Oak Park Elem	834	60	12	0	822	825	+0.4
Ocean Breeze Elem	881	65	0	66	881	882	+0.1
Patrick Elem	407	30	10	20	397	403	+1.5
Riverview Elem	598	45	20	0	578	568	-1.7
Sabal Elem	719	50	13	22	706	707	+0.1
Sea Park Elem	516	30	0	0	516	516	0
Sherwood Elem	602	40	0	54	602	604	+0.3
South Lake Elem	627	45	19	9	608	610	+0.3
Surfside Elem	596	50	0	4	596	592	-0.7
Tropical Elem	864	60	0	85	864	851	-1.5
Title I Schools							
Andersen Elem	733	65	0	0	733	727	-0.8
Cambridge Elem	723	60	20	61	703	706	+0.4
Creel Elem	548	40	0	23	548	551	+0.5
Gardendale Elem	576	30	15	6	561	560	-0.2
Golfview Elem	593	45	29	15	564	562	-0.4
Henegar Elem	474	35	0	0	474	484	+1.5
Imperial Estates	496	35	0	86	496	503	+1.4
Meadowlane Elem	891	75	0	203	891	890	-0.1
Mims Elem	369	25	13	0	356	358	+0.6
Palm Bay Elem	1036	95	12	52	1024	918	-10.4
Pineda Elem	966	80	0	46	966	956	-1.0
Pinewood Elem	369	30	14	22	355	352	-0.8
Rockledge Elem	358	25	46	0	312	309	-1.0
Saturn Elem	839	70	0	25	839	834	-0.6
Stevenson Elem	500	35	13	49	487	494	+1.4
University Park Elem	610	55	29	10	581	583	+0.3
Whispering Hills Elem	534	30	17	53	517	530	+2.5
Old Dixie Elem	582	40	7	0	575	570	-0.9

Higher grades not included in Title I report.

TABLE B-4

GARY, INDIANA

Grade Span K-6	1973 OCR SURVEY DATA					Fall 1973 Title I Enrollment
Non-Title I Schools	Total Enrollment	~ 1/2 Kinder-garten	Special Education	Handi-capped	"Best Match"(1)-[(2)+(3)]	
	1	2	3	4	5	6
Aetna	890	65	42	0	783	787
Ambridge	392	35	0	0	357	355
Brunswick	1209	110	0	0	1099	1121
Glen Park	228	15	0	0	213	203
Kuny	358	20	13	12	325	325
Marquette	676	70	0	0	606	624
Melton	419	30	22	6	367	378
Nobel	628	45	0	0	583	558
Pittman Square	305	20	0	6	285	278
Riley	536	40	0	0	496	505
Webster	398	30	27	0	341	350
Title I Schools						
Banneker (ungraded)	428	30	0	0	398	412
Bethune	553	35	7	0	511	419
Beveridge	750	55	13	0	682	700
Carver	524	35	41	0	448	451
Chaseq	460	30	0	0	430	441
Douglass	560	35	27	0	498	496
Drew	813	45	23	0	745	777
Dunbar	521	35	15	0	471	461
Duncan	751	50	20	0	681	690
Franklin	621	40	11	0	570	558
Ivanhoe	1281	100	26	0	1155	1173
Jefferson	1133	65	15	32	1053	1038
Lincoln	773	50	22	0	701	765
Locke	980	60	29	0	891	893
Norton	666	40	14	0	612	626
Pyle	675	50	25	0	600	622
Spaulding	871	80	20	0	771	803
Vohr (ungraded + K)	725	50	13	0	662	655
Washington	781	55	13	0	719	727
Williams	762	40	11	0	711	708
Miller	107	15	0	0	92	86

Note: Higher grades not included in Title I Report.

TABLE B-5

HUNTSVILLE, ALABAMA

Grade Span 1-6	1973 OCR SURVEY DATA: Total Enrollment	~ 1/2 Kinder-garten	Special Education	Handi-capped	"Best Match" (1)	Fall 1973 Title I Enrollment	% Diff.
Non-Title I Schools	1	2	3	4	5	6	7
Blossomwood	547		0	34	547	531	-2.9
Montview	540		19	0	540	536	-0.7
University Place	412		15	0	412	404	-1.9
Chapman	814		27	0	814	814	0
Madison Pike	957		20	14	957	960	-0.3
Davis Hills Elem	571*		22	0	571*	783	0*
Highlands	875		16	0	875	860	-1.7
Mountain Gap Elem		See	Combined	Schools		663	
Whitesburg Elem	632		0	40	632	627	-0.8
Chaffee	594		16	0	594	593	-0.2
Monte Sano	182		0	0	182	180	-1.1
Weatherly Heights	1147		28	0	1147	1148	+0.1
Jones Valley	728		12	0	728	735	+1.0
Title I Schools							
West Huntsville	565		47	0	565	538	-4.8
Calvary Hill		See	Combined	Schools		495	
Terry Heights	473		65	0	473	453	-4.2
Fifth Avenue	348		34	18	348	330	-5.2
Lincoln	509		57	27	509	490	-3.7
Farley	181		56	0	181	161	-11.0
East Clinton	396		25	0	396	387	-2.3
Colonial Hills	631		26	0	631	630	-0.2
Rolling Hills	975		9	12	975	948	-2.8
Lakewood	841		23	0	841	816	-3.0
McDonnell	620		15	0	620	612	-1.3
West Mastin Lake	920		41	0	920	920	0
Ridgecrest	1046		34	35	1046	1023	-2.2
Grade Span 7-9							
Non-Title I Schools							
Chapman JHS	659		27	0	659	634	-3.8
White JHS	1183		10	4	1183	1183	0
Westlawn JHS	1291		50	0	1291	1273	-1.4
Mountain Gap JHS		See	Combined	Schools		604	
Whitesburg JHS	1010		28	0	1010	992	-1.8
Title I Schools							
Calvary Hill JHS		See	Combined	Schools		141	
Stone JHS	853		40	0	853	800	-6.2
Huntsville JHS	609		35	11	609	583	-4.3
Davis Hills JHS	1193*		43	0	1193*	981	0*
Grade Span 10-12							
Non-Title I Schools							
Butler	2185		41	0	2185	2183	0
Grissom	2243		0	0	2243	2228	-0.7
Huntsville	2126		55	0	2126	2112	-0.7
Johnson	2088		38	0	2088	2082	-0.3
Lee	1272		27	0	1272	1260	-0.9
Schools Combined in OCR Survey							
Mountain Gap Elem & JHS	1280		16	0	1280	1267	-1.0
Calvary Hill Elem & JHS	623		49	0	623	636	+2.1

no kindergarten

no kindergarten

*Note: OCR and Title I differ in grade spans included in Davis Hills Elementary and Davis Hills JHS.
There are no Title I High Schools listed for Grade Spans 10-12.

APPENDIX C

THE COMPARABILITY INDEX AND RACIAL-ETHNIC ALLOCATIONS

This appendix describes the application of the Comparability Index to measuring resources for minority pupils in Title I schools relative to resources for majority pupils in the same schools. Because the original paper defining the Index is now out of print, the general form of the Index is described first.*

Current regulations governing comparability establish a cutoff point of five percent; if per-pupil resources in a Title I school are not within five percent of the average non-project resources, the Title I school is not comparable. In turn, an LEA is not comparable if any one or more of its schools are not comparable. A cutoff method may be required for simplicity of administration, but it provides little insight into the relative resources of a school or, more important, the relative comparability of a district as a whole. Such information is helpful to administrators in determining districts or States which are priority targets for technical assistance or enforcement, and is superior to a court of the number of schools meeting or failing a fixed criterion. This is particularly so when the fixed criterion must be considered a matter of arbitrary judgment, as is the case with the comparability requirement.

To obtain some idea of the anomalies in measuring resources, let us consider four hypothetical LEAs, each of which has five Title I schools. Although the LEAs have different salary structures, we can convert them all into a common framework, as follows: We set the non-

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* A Title I Comparability Index, J. N. Killalea and R. M. Kerchner, January 1974.

project average of resources (salary-per-pupil and pupils-per-staff) as the standard and calculate the resources in project schools relative to that standard. Thus, the non-project average is set at 1.0 and the resource level for each project school is calculated as a percentage of the non-project average. Table 1 shows the hypothetical resources in each school for the four LEAs.

Table 1. Allocations in Four Hypothetical LEAs

	LEA A	LEA B	LEA C	LEA D
Non-Project Average	1.000	1.000	1.000	1.000
Project Schools				
1	.970	.951	1.000	1.400
2	.97	.951	1.000	.900
3	.97	.951	1.000	.900
4	.97	.951	1.000	.900
5	.97	.951	.949	.900

LEAs A and B are comparable by the fixed criterion of five percent, but A allocates significantly more to project schools than does B, and is, in some sense, "more comparable." LEAs C and C are not comparable, but C provides significantly more resources to its project schools than does D. Moreover, C is "more comparable" than B; and possibly than A.

Using the data in Table 1, a different calculational method can be developed. Assume for the moment that all schools have the same number

of students. If we average the percentages in Table 1 for the project schools, we obtain:

LEA A	.970
B	.951
C	.990
D	1.000

The result confirms our feeling that C is superior in overall resources, but the defect of this calculation can be seen in LEA D. In this case, one school receiving very high levels of service can mask the low levels of resources in the four other schools. We avoid this problem by imposing the following rule: If the per-pupil resource allocation in a project school is higher than the non-project average, use the non-project average for that school. Recalculated by this rule, LEA D would have an index of only .920, which is more in accord with our common sense judgement of the standing of D relative to the other districts.

To convert this information into a practical index requires taking into account several considerations. It should be applied separately to each of a district's several grade spans, in keeping with the formal comparability standard. It must also take into account the different enrollments in the schools, because it is desirable for the index to reflect average per-pupil resources rather than average per-school resources. The formulation of the Comparability Index C, for a given grade level, is thus:

$$C = \frac{\sum_i S_i M_i}{\sum_i S_i}$$

where

S_i = number of pupils in project school i

M_i = ratio of the per-pupil resource allocation in project school i to the per-pupil resource allocation in the non-project schools in the grade level. However (rule): if M_i is greater than 1.0, take M_i to be 1.0.

The sum over i is over all project schools in the LEA.

The remaining simplification in the formulation thus far is that there is a single resource-per-pupil. The Comparability Index can be calculated for any given (quantitative) definition of resources. To accord with the Title I situation, separate computations are made of the pupil-per-teacher index and the salary-per-pupil index, and the two are averaged with equal weights.* (The Index could be computed using different weights for these two criteria, or by adding longevity payments to the salary component, or by incorporating "other instructional costs.") Specifying M_i more fully, the formulation becomes:

$$C = \frac{\sum_i S_i \left(\frac{E_i}{\bar{E}} + \frac{T_i}{\bar{T}} \right)}{\sum_i S_i}$$

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* Since it is desired to determine resources per pupil, the pupil: staff ratio is backwards; the actual calculation is performed on the basis of "staff members per pupil."

where

E_i = per-pupil base salary expenditures at the i^{th} Title I school.

$\overline{E}$ = ratio of the total base salary expenditures in non-project schools to the total number of pupils in non-project schools.

T_i = number of full-time-equivalent staff members per-pupil at the i^{th} Title I school.

$\overline{T}$ = ratio of the total number of full-time-equivalent staff members at non-project schools to the total number of students attending non-project schools.

The method defined above is the standard Comparability Index for evaluating LEAs. Simple variations in the formulation, and accompanying variations in the data employed, yield other indexes, such as a State-wide index, or an index restricted to those schools in a district that are not comparable (by the formal criterion). The method can also be applied to any student group at all, assuming that the data base contains information on the group. Of particular interest in this study is its application to minority and majority students in project schools.

To compute the Comparability Index for a given subset of Title I students, two calculations must be made. In one, S_i is defined as the desired subset -- e.g., Black, or Spanish-heritage, or all minority. In the other, S_i is defined as all other Title I students. Separate indexes are than calculated for these two definitions for each school by summing the pupil-weighted values for each project school in the district. The resource measures are not modified.

In calculating resources for minorities within the project school grouping, an additional change is required. In the general application, a ceiling of 1.0 was placed on the value of the Index for any project school in order to avoid giving credit to a high-resource school in a way that would obscure low-resource schools. Because it is of interest to know whether or not there are disparities within the project school grouping, the Comparability Index is allowed to be greater than 1.0.